Fisher
Bioblock Scientific
Parc d'innovation - BP 50111 - F67403 illkirch cedex

France
tél 03 88 67 14 14
fax 03 88 67 11 68
email infos@bioblock.fr
www.bioblock.com

Belgique / België
tél 056 260 260
fax 056 260 270
email belgium@bioblock.com
www.be.fishersci.com

Mode d'emploi

Purelab ultra unit

ELGA LABWATER

OPERATOR MANUAL

VERSION 1 UK – 05/02

REF: MANU37248

VIVENDI water

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Publication ref: MANU37248

Version 1 - 05/02

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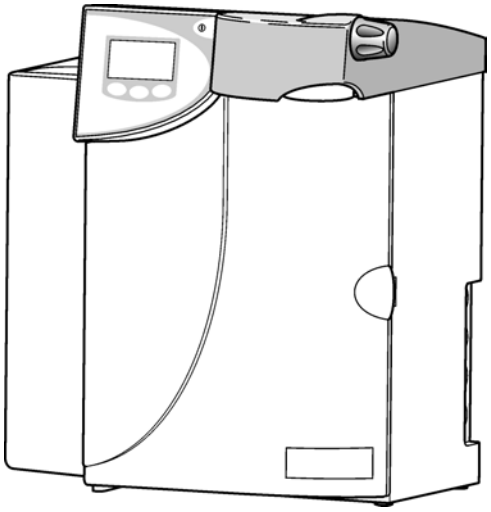
1. INTRODUCTION



PURELAB Ultra

1.1 Product Range

This operator manual has been prepared for the ***PURELAB Ultra*** product models:

PURELAB Ultra Scientific

PURELAB Ultra Bioscience

PURELAB Ultra Genetic

PURELAB Ultra Ionic

PURELAB Ultra Analytic

1.2 Use of this Manual

This manual contains full details on installation, commissioning and operation of the ***PURELAB Ultra*** unit. If the instructions in this handbook are not followed then the performance of this product and/or the safety of the user may be compromised.

1.3 Customer Support

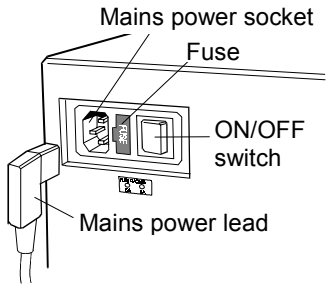
Service support and consumable items are available from your local supplier or distributor. Refer to customer service contact details shown at the end of this publication.

2. HEALTH AND SAFETY NOTES

PURELAB Ultra products have been designed to be safe, however, it is important that personnel working on these units understand any potential dangers. All safety information detailed in this handbook is highlighted as **WARNING** and **CAUTION** instructions. These are used as follows:

WARNING! **WARNINGS ARE GIVEN WHERE FAILING TO OBSERVE THE INSTRUCTION COULD RESULT IN INJURY OR DEATH TO PERSONS.**

CAUTION! **Cautions are given where failure to observe the instruction could result in damage to the equipment, associated equipment and processes.**



Mains Power Supply

2.1 Electricity

It is essential that the electrical supply to the ***PURELAB Ultra*** is isolated before any items are changed or maintenance work performed.

The ON/OFF switch is located at the left-hand side of the unit. The mains power lead is located just behind the ON /OFF switch.

WARNING! **THIS APPLIANCE MUST BE EARTHED.**

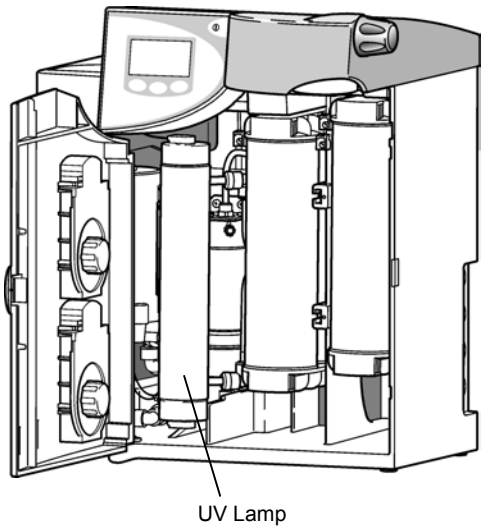
The main water supply should be isolated and residual pressure released prior to removal of any Purification Packs or carrying out work on the unit.

Switching off the electrical supply will isolate the source of mains water pressure.

2.2 Ultraviolet Light

WARNING! **UNDER NO CIRCUMSTANCES SHOULD THE LAMP BE CONNECTED AND ACTIVATED WHEN OUTSIDE THE HOUSING.**

The Genetic, Analytic and Ionic units are fitted with an ultraviolet lamp. The UV lamp is enclosed in a stainless steel chamber ensuring that the operator will not be exposed to UV light.



Ultra with UV Lamp

2.3 Sanitization Chemicals

During the sanitization cycle a CT1 sanitization tablet is used and relevant safety information is included in this handbook. A safety data sheet conforming to COSHH regulations is also provided with the tablets and should be read before a tablet is used.

2.4 Control of Substances Hazardous to Health (COSHH)

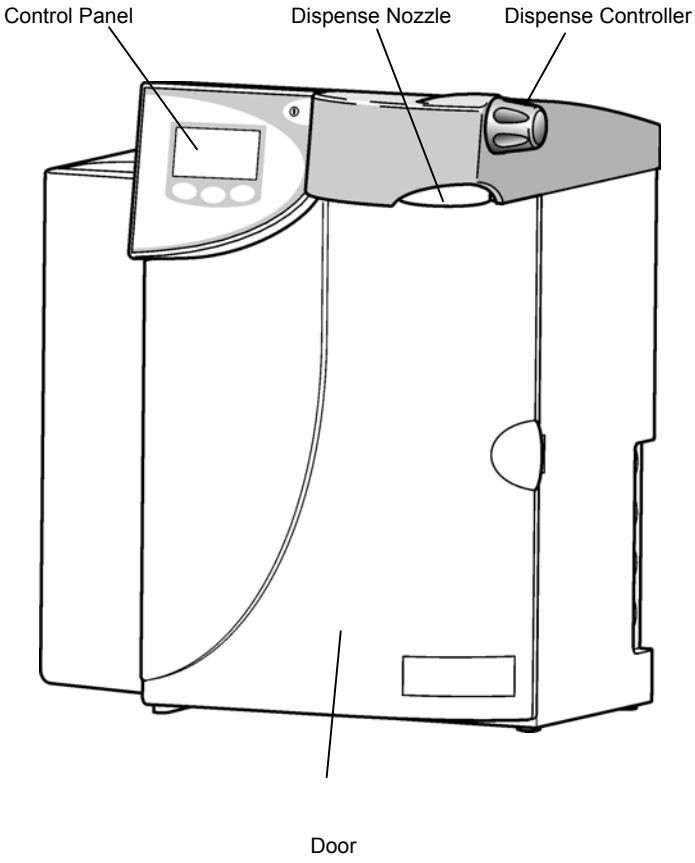
Material safety data sheets covering the various replaceable Purification Packs are available upon request. Contact your local supplier or distributor.

3. PRODUCT AND PROCESS DESCRIPTION

3.1 Product Description

The ***PURELAB Ultra*** water purification unit has been specifically designed to provide a supply of ***ultrapure water*** with very low levels of impurities for laboratory, medical and industrial applications.

The ***PURELAB Ultra*** can be bench, underbench or wall mounted with an optional wall mounting kit. A range of accessories is available to complement the unit (*see Section 10. - Consumables and Accessories, for detail)*.

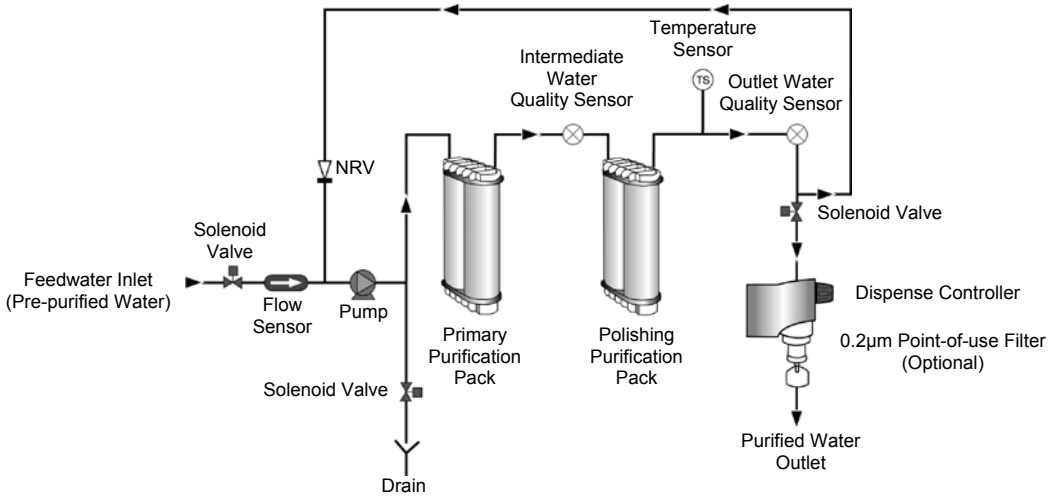


PURELAB Ultra

The ***PURELAB Ultra*** range of water purification units has been designed to provide the ultimate in high purity water for laboratory applications. The products need to be fed with pre-treated water, typically from a reverse osmosis supply. They can be operated directly from a ringmain feed as point of use polishers, with or without local buffer storage, using a **Docking Vessel** or suitable reservoir. Alternatively, they can be supplied from a local pre-treatment/storage system, for example a ***PURELAB Prima*** and **Docking Vessel** combination.

3.2 Process Description

Scientific

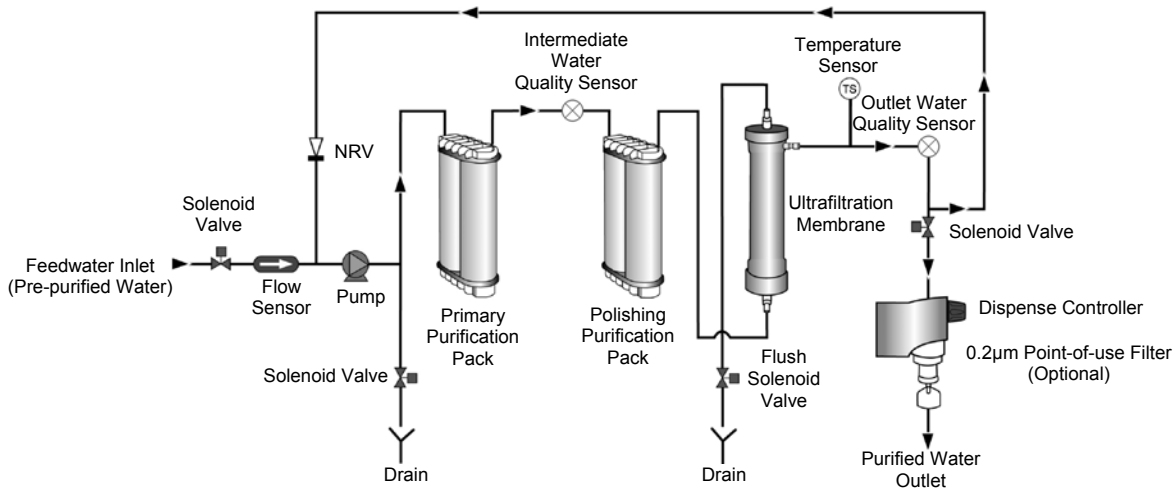


Pre-treated water enters via an inlet solenoid, passes through a flow sensor and is pumped through the primary purification pack, an intermediate water quality sensor, a polishing purification pack and final temperature and water quality sensors before being dispensed or recirculated through a non-return valve back to the pump inlet.

The first purification pack removes most of the impurities from the water and the intermediate water quality sensor then measures the resistivity of the water from the first pack to check when it needs to be replaced.

Any remaining ionic and organic impurities are removed by the second polishing purification pack. Product water resistivity and temperature are measured before dispense.

Bioscience

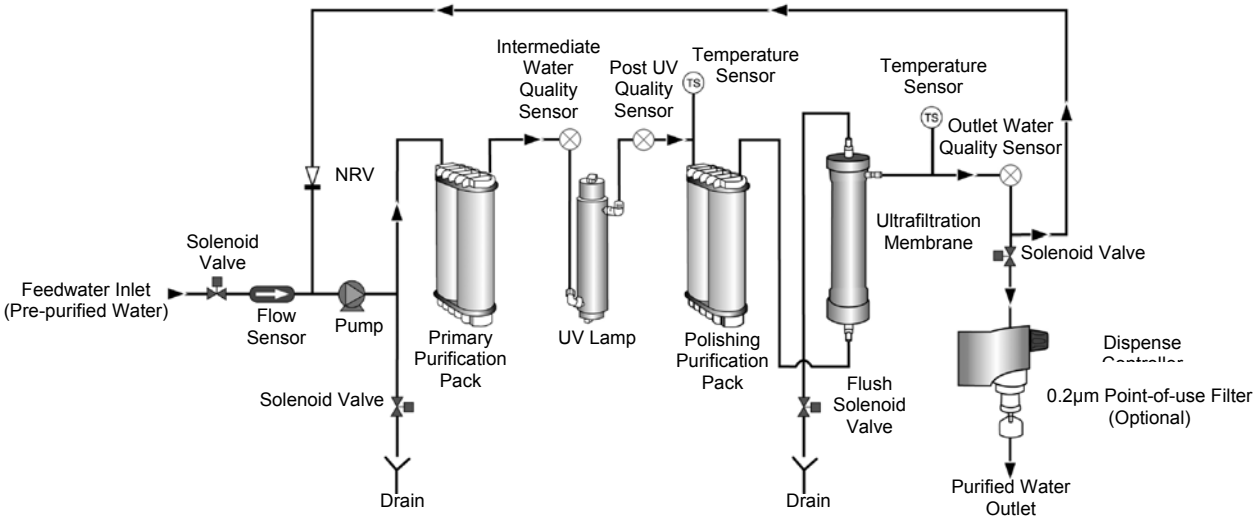


Pre-treated water enters via an inlet solenoid, passes through a flow sensor and is pumped through the primary purification pack, an intermediate water quality sensor, a polishing purification pack, an ultrafilter and final temperature and water quality sensors before being dispensed or recirculated through a non-return valve back to the pump inlet.

The first purification pack removes most of the impurities from the water and the intermediate water quality sensor then measures the resistivity of the water from the first pack to check when it needs to be replaced.

Any remaining ionic and organic impurities are removed by the second polishing purification pack; the ultrafilter removes pyrogens, bacteria and other microbial impurities as well as particles. Product water resistivity and temperature are measured before dispense.

Genetic



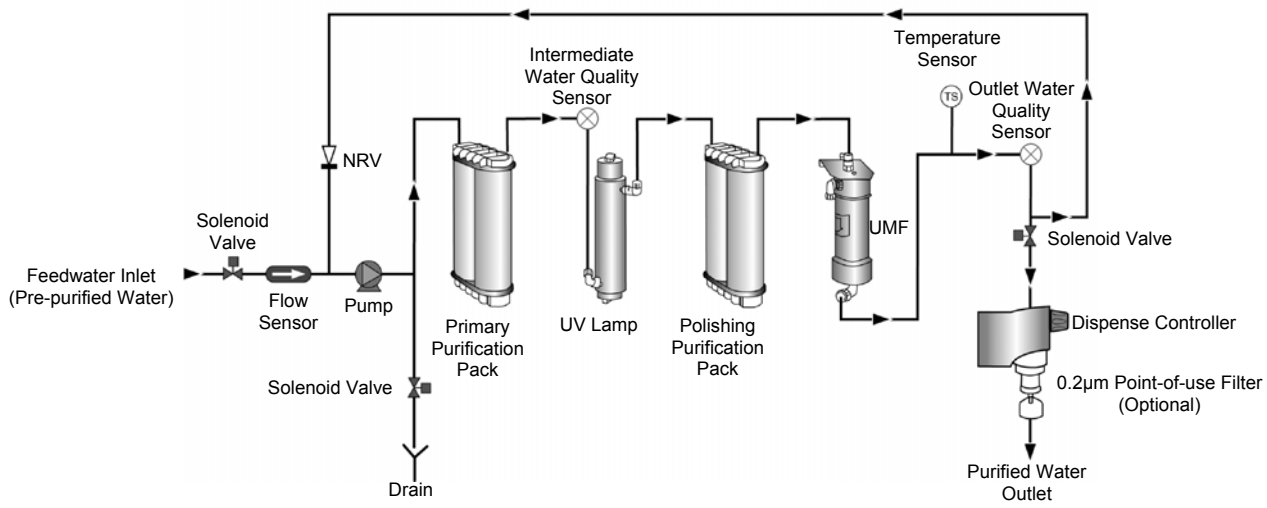
Pre-treated water enters via an inlet solenoid, passes through a flow sensor and is pumped through the primary purification pack and an intermediate water quality sensor. The water then flows through a UV chamber, further resistivity and temperature sensors, a polishing purification pack, an ultrafilter and final temperature and water quality sensors before being dispensed or recirculated through a non-return valve back to the pump inlet.

The first purification pack removes most of the impurities from the water and the intermediate water quality sensor then measures the resistivity of the water from the first pack to check when it needs to be replaced.

Purified water flows directly through the UV chamber where it is exposed to intense UV radiation at wavelengths of 254nm and 185nm to provide continuous bacterial control and the photo-oxidation of residual organic impurities. The second temperature compensated water quality sensor provides data for TOC monitoring.

Any remaining ionic and organic impurities are removed by the second polishing purification pack; the ultrafilter removes pyrogens, bacteria and other microbial impurities as well as particles. Final water resistivity and temperature are measured before dispense.

Ionic



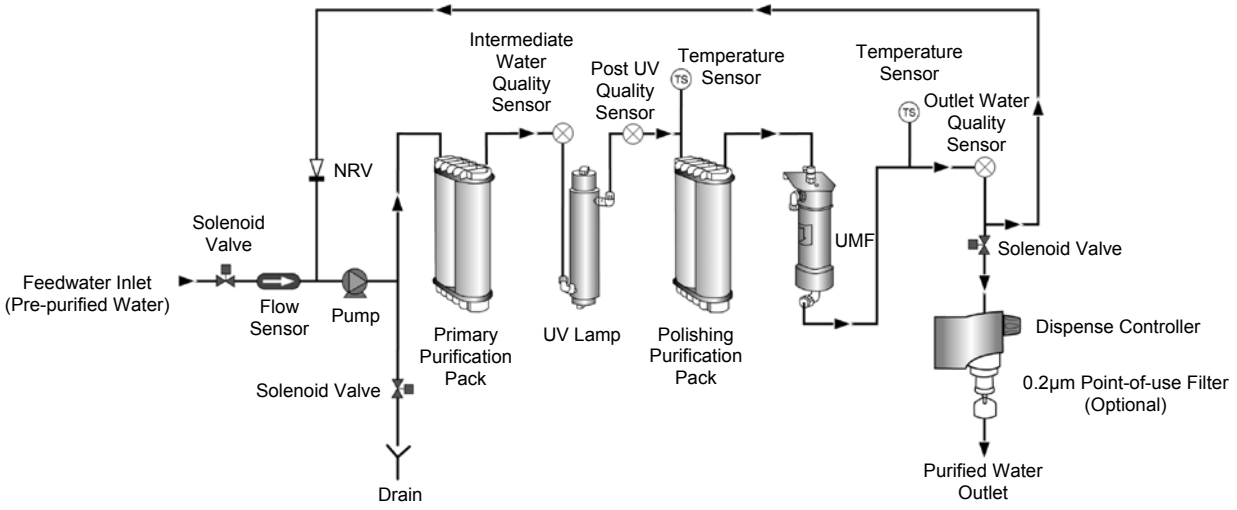
Pre-treated water enters via an inlet solenoid, passes through a flow sensor and is pumped through the primary purification pack and an intermediate water quality sensor. The water then flows through a UV chamber, a further resistivity and temperature sensor, a polishing purification pack, an ultra microfilter and final temperature and water quality sensors before being dispensed or recirculated through a non-return valve back to the pump inlet.

The first purification pack removes most of the impurities from the water and the intermediate water quality sensor then measures the resistivity of the water from the first pack to check when it needs to be replaced.

Purified water flows directly through the UV chamber where it is exposed to intense UV radiation at a wavelength of 254nm to provide continuous bacterial control.

Any remaining ionic and organic impurities are removed by the second polishing purification pack; the ultra microfilter removes bacterial impurities and particles. Product water resistivity and temperature are measured before dispense.

Analytic



Pre-treated water enters via an inlet solenoid, passes through a flow sensor and is pumped through the primary purification pack and an intermediate water quality sensor. The water then flows through a UV chamber, further resistivity and temperature sensors, a polishing purification pack, an ultra microfilter and final temperature and water quality sensors before being dispensed or recirculated through a non-return valve back to the pump inlet.

The first purification pack removes most of the impurities from the water and the intermediate water quality sensor then measures the resistivity of the water from the first pack to check when it needs to be replaced.

Purified water flows directly through the UV chamber where it is exposed to intense UV radiation at wavelengths of 254nm and 185nm to provide continuous bacterial control and the photo-oxidation of residual organic impurities. The second temperature compensated water quality sensor provides data for TOC monitoring.

Any remaining ionic and organic impurities are removed by the second polishing purification pack; the ultra microfilter removes bacterial impurities and particles. Product water resistivity and temperature are measured before dispense.

3.3 Technical Specification

The Technical Specifications for the ***PURELAB Ultra*** are as follows:

Feedwater*	
Parameter	**Limits**
Source - Originally from potable supply, then pre-treated	Preferably reverse osmosis (RO) or filtered service deionisation (SDI) or distilled. **Note:** mixed bed or twin bed deionised supplies should be cation limited at exhaustion.
Fouling Index (max)	1 for all models. A 0.2 micron membrane prefilter is recommended for all non-RO feeds.
Service Deionisation (SDI) - MΩ-cm	1 MΩ-cm minimum resistivity at exhaustion.
Reverse Osmosis (RO) - µS/cm	Ideally < 30 µS/cm
Free Chlorine	0.05ppm max.
TOC	50ppb max.
Carbon Dioxide	30ppm max.
Silica	2ppm max.
Particulates	Filtration down to 0.2 micron advisable to protect internal and/or point of use filters
Temperature	1-40°C - Recommended 10-15°C
Flowrate (maximum requirement)	130 l/hr
Drain requirements (gravity fall with air gap). Maximum during service	Up to 2 l/min
Feedwater Pressure	0.7bar (10psi), maximum, 0.07bar (1psi) minimum

* Contact technical support for advice on feedwaters outside the range listed.

Note: Different system configurations are available for different feedwater sources. See system set up.

Dimensions	
Height	490mm (19.3")
Width	410mm (16.2")
Depth	365mm (14.4")
Weight	
Scientific	14.0kg (30.8 lb.)
Bioscience	14.5kg (32.0 lb.)
Ionic	14.5kg (32.0lb.)
Analytic	15.0kg (33.1lb.)
Genetic	15.0kg (33.1lb.)

Connections	
Inlet-quick connect	8mm (5/16") OD
Drain	8mm (5/16") OD
Flush - Bioscience/ Genetic	8mm (5/16") OD
Positioning	Wall, bench or under bench mounted.
Environment	Clean dry indoor. Temp 5-40°C. Humidity max 80% non-condensing.

Electrical Requirements	
Mains input	100 -240V ac, 50-60Hz all models
System voltage	24V dc
Power consumption during recirculation	60VA
Power consumption during dispense	75VA
Fuses	2 x T6.3 Amp
Reservoir level connection	Jack Plug 3.5mm
Noise level during recirculation	<40dBA

User Interface		
Display	Continuous graphical quality display	
	Graphical flow schematic on screen with mimic display	
	Backlit display with Intuitive Icons	
Adjustable settings	Volumetric dispense	Selectable dispense volumes (0.1 – 60.0 liters)
	Recirculation mode	Intermittent or continuous
	Feed water type	Selectable (RO/DI/SDI)
	Display viewing angle	Adjustable electronically
	Water quality units	Selectable (MΩ-cm or µS/cm)
	Water quality alarm	Selectable alarm setpoints
	Date / time	Adjustable
	Auto restart after power failure	Selectable (On/Off)
	Audible alarm	Selectable (On/Off)
	Temperature control	Selectable alarm setpoints
	Night service	Selectable (On/Off)
Indicators	Product water quality	Resistivity or conductivity
	Intermediate water quality	Resistivity or conductivity
	Temperature	Degrees Centigrade or Fahrenheit
	Total Organic Carbon (TOC)*	ppb C
	Purification pack	Replacement date
	UV lamp*	Replacement date
	Filter*	Replacement date
Alarms-Audiovisual	Purified water purity	Above set point alarm
	Temperature****	Above set point alarm
	UV lamp operation*	Imminent lamp failure or failure to start
	Calibration	Calibration alarm – calibration required
	Purification pack	Change reminder
	UV lamp*	Change reminder
	Filter*	Change reminder
	Reservoir****	Low level / level control disconnect alarm
Outputs	RS232 printer connection	
	RS232 remote display connection	
	Volt free contact-internal	
	Remote dispense	

Safety Features
Power fail safe
Water temperature alarm
Water quality alarm
Purification pack interlock
UV current monitoring
Timeout of manual dispense
Low operating voltage 24V
Dry contact alarm connection
Visual alarms
Audible alarms

Operational Features
Low noise levels – minimum intrusion
Continuous calibration to traceable standards
Drop dispense
Multistage monitoring
Restart on power interrupt
Volumetric dispense
Optional printer kit for record of operating parameters
Optional remote display

Purified Water Specification					
	Scientific	***Ionic***	***Analytic***	***Bioscience***	***Genetic***
Flowrate	2.0 l/min max.				
Inorganic	Resistivity 18.2 MΩ-cm (0.055μs/cm)				
TOC	**<15ppb	**<5ppb	**<2ppb	**<10ppb	**<3ppb
Bacteria	***<1cfu/ml	<1cfu/ml			
Pyrogens	-			<0.03Eu/ml	<0.001Eu/ml
pH	Effectively neutral				
Particles	***0.2μm	0.05μm		Ultrafiltration	
RNase / DNase	-				Free
Capacity (LC147)	56,000 liters >18MΩ-cm per single purification pack μS/cm at pH7.0				
Conforms to ASTM, CAP, NCCLS – TYPE 1 and BS3978 Grade 1 Specification.					

* On some models only.

** Dependant on feedwater - recommended feed <50ppb TOC

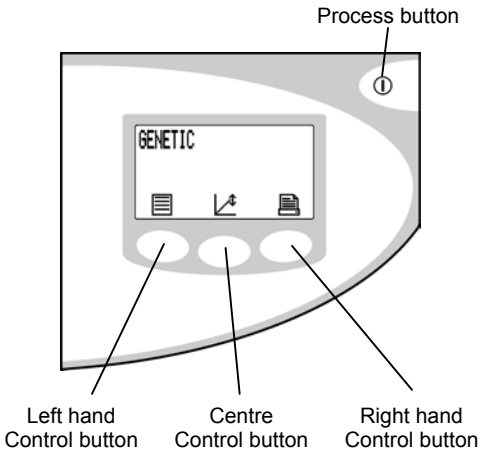
*** With POU filter fitted.

**** Switches process off.

Purification Packs
Standard pack LC147 recommended for most applications. Refer to Section 10 for alternative cartridges.

As part of our policy of continual improvement we reserve the right to alter the specifications given in this document.

4. CONTROLS



Control Panel

The ***PURELAB Ultra*** operates with a tactile membrane control panel, which has a graphics display window and four multi-purpose control buttons.

Details of how to use the controls will be given in the appropriate sections.

The ***PURELAB Ultra*** control panel has a range of control icons as follows:

Button	Icon	Function
PROCESS	⏻	Turns the process on/off **ESCAPE** from any feature
LEFT		Menu
		Scroll
	(0.10)*	Preset dispense volume
		Reset
CENTRE		Accept
		Volumetric dispense
	(0.50)*	Preset dispense volume
RIGHT		Mute Alarm
		Printer
	(1.00)*	Preset dispense volume
		Intermittent recirculation

* Example only - Ref. to Section 6.3 Step 3.

5. INSTALLATION INSTRUCTIONS

5.1 Unpacking the *PURELAB Ultra*

The following items are supplied with your ***PURELAB Ultra.***

1. ***PURELAB Ultra*** unit.
2. Sanitization by-pass blocks LA638 (2 off, fitted in unit).
3. 6 metres of 8mm (5/16") O/D tube.
4. 1 off Pack of CT1 tablets.
5. 1 off Strainer Assembly.
6. Operator Manual in English.
7. Multilingual Operator Manual on CD.
8. Mains Lead.
9. Reservoir Level Connecting Lead.
10. Icon Directory, fitted on inside of door.

5.2 Positioning the *PURELAB Ultra*

Before installation and operation of the ***PURELAB Ultra*** unit, please read and observe the following points.

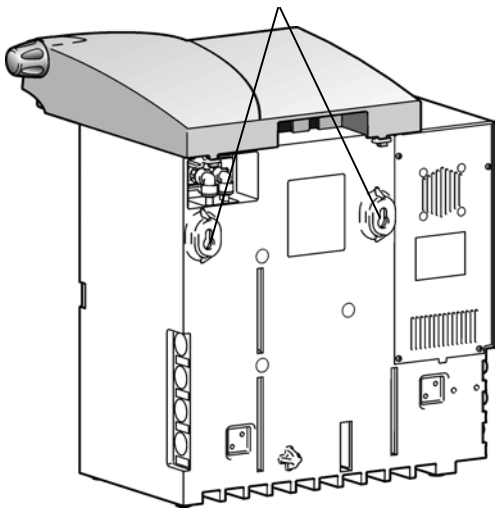
Environment

The unit should be installed on a flat, level surface, in a clean, dry environment. The unit can also be wall mounted against a vertical wall capable of supporting the weight (for this we recommend the use of the wall mounting kit Part No. LA610 on substantial brick/concrete walls or LA622 for stud partition walls).

WARNING! **IF THE UNIT IS TO BE WALL MOUNTED, ENSURE IT IS MOUNTED USING THE CORRECT WALL MOUNTING KIT AND THAT THE WALL IS CAPABLE OF SUPPORTING THE OPERATING WEIGHT OF THE SYSTEM. ALWAYS CAREFULLY FOLLOW THE INSTRUCTIONS INCLUDED IN THE KIT.**

Note: *Refer to Specifications for unit weights (Section 3.4 - Technical Specification).*

Rear Mounting Points

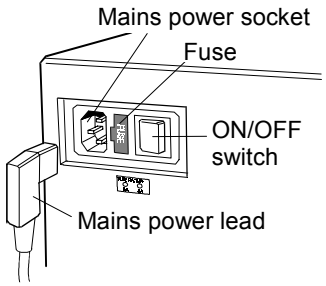


Unit Rear Mounting Points

The unit is designed to operate safely under the following conditions:

- Indoor Use
- Altitude up to 2000m
- Temperature Range 5 - 40°C
- Maximum Relative Humidity 80% @ 31°C decreasing linearly to 50% @ 40°C, non-condensating

The unit is in Installation Category II, Pollution Degree 2, as per IEC1010-1.



Electrical Connections

Electrical

The units can be connected universally to any electrical supply in the range of 100 - 240V and 50 - 60Hz. The mains lead is supplied with a molded plug on one end and a molded connector to the unit on the other. The unit should be connected to an earth. The unit includes a battery which will require changing on a periodic basis, typically every 3-5 years. (Contact local Service provider)

WARNING! **DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER (3 VOLTS, LITHIUM CR2032). DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

Drain/Flush

A semi-rigid flexible connection to a sink or suitable drain capable of at least 2.0l/min is required. The drain point should have a gravity fall below the level of the unit and any connections direct to drain should have an air-break device fitted. On the Genetic & Bioscience units a separate flush line to drain is required. The drain and flush drain lines should run individually to a convenient drain point.

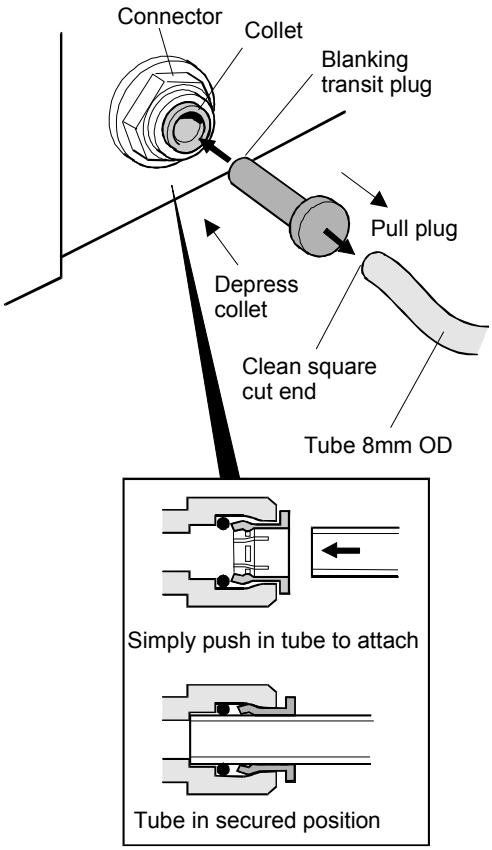
Feed Water

The feedwater should be potable water, pre-purified using reverse osmosis, deionisation, or distillation. If using a supply other than reverse osmosis treated, it is strongly recommended that a 0.2 micron membrane filter is installed prior to remove colloidal impurities. The feedwater should enter the ***PURELAB Ultra*** via an 8mm (5/16") O/D semi rigid tube, and should be in the temperature range 1 to 40°C (34 to 104°F). To ensure optimum performance it is recommended that the feedwater temperature be between 10 to 15°C.

CAUTION! **Operating with feed water temperatures outside the range from 1 to 40°C (33.8 to 104°F) will cause damage to the *PURELAB Ultra* unit.**

For pressurized feeds, the minimum direct inlet pressure is 0.07bar (1.0psi) and maximum inlet pressure is 0.7bar (10psi). Higher feedwater pressures must be reduced using a pressure regulator valve (Part No. LA575).

Reservoir feeds to the ***PURELAB Ultra*** unit should be positioned at the same height, or above the unit, to provide a positive flooded inlet pressure of approximately 0.07bar (1psi).



Fitting tubes

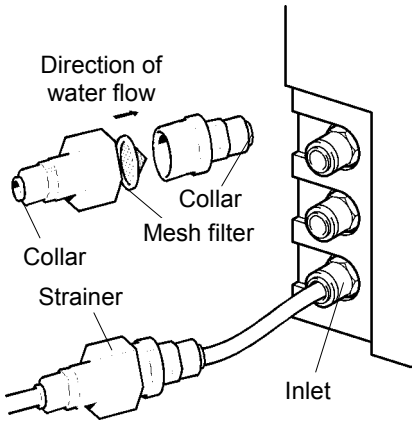
5.3 Connecting the *PURELAB Ultra*

Once the ***PURELAB Ultra*** unit has been positioned either on a wall or on a bench, it should be connected as follows:

- Mains water inlet tube
- Drain tube - to drain
- Flush tube (Bioscience and Genetic) - to drain

Step 1 - Remove Transit Plugs

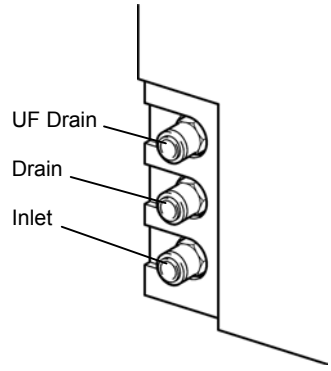
1. PUSH in collet on connector.
2. PULL out transit plug.
3. CUT a clean square end on an 8mm OD semi rigid drain tube.
4. PUSH tube into connector.



Feed Water Inlet

Step 2 - Connect Water Inlet

1. Connect 8mm tube from the ***PURELAB Ultra*** inlet to the inlet strainer.
2. Connect the inlet strainer to the pre-purified water supply.



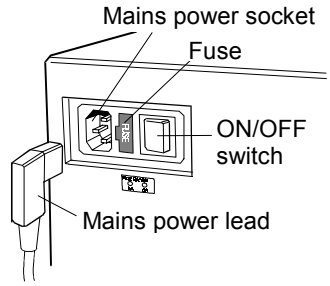
Inlet and Drain Connection

Step 3 - Connect Drains

1. Connect 8mm tube from the drain and UF drain (if fitted) and direct to a suitable drainage point.

CAUTION! **The drain and flush lines should allow a gravity fall to drain with no restrictions.**

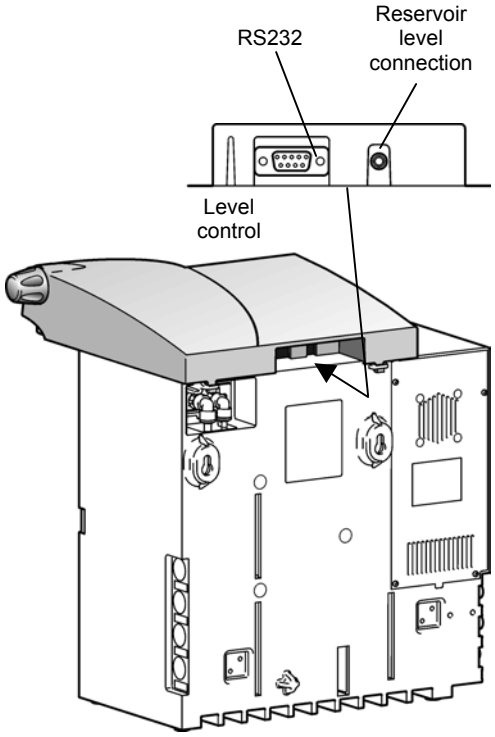
CAUTION! **If the water supply is at a pressure greater than 0.7bar (10psi) fit a pressure regulator (LA575).**



Electrical Connections

Step 4 - Connect Electrical Supply

1. PLUG mains power lead into the mains power socket on the left hand side of the ***PURELAB Ultra*** unit.
2. PLUG mains power lead into mains socket.

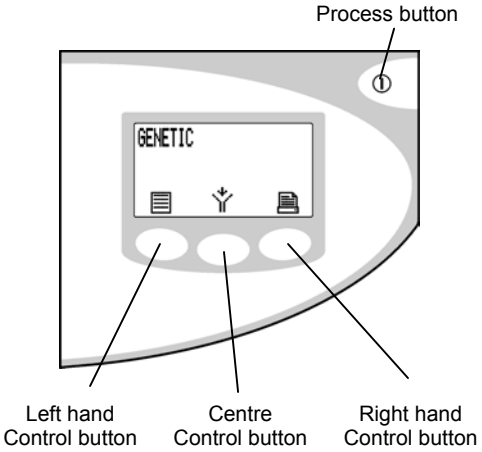


Reservoir Level Connection

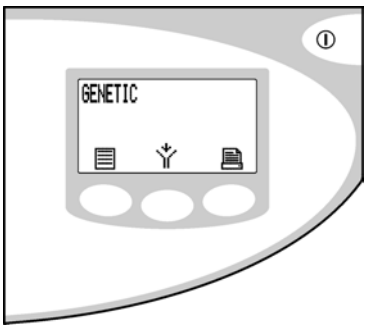
Step 5 - Resevoir Level Connection

1. INSERT jack plugs into the level control socket located at rear of unit and reservoir.

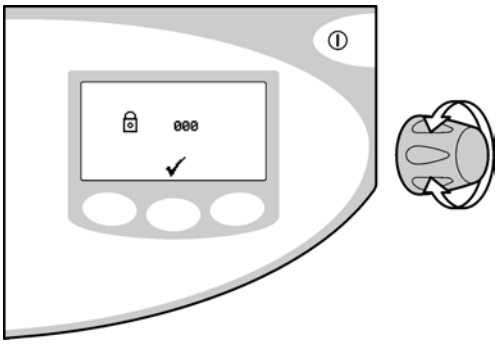
   Note: If wall mounting the unit it is recommended that the jack plug should be inserted prior to locating the unit on the wall mounting bracket.



Control Panel



Start Up Screen



Password Screen

5.4 Initial Controller Set-Up

The ***PURELAB Ultra*** control panel is fitted with four control buttons. These are:

1. The PROCESS ⏻ button, which switches the purification process ON and OFF.
2. Three software controlled touch pad buttons which are used to control set-up and process control functions.

When the ***PURELAB Ultra*** unit is started for the first time after installation the following steps should be carried out to set up system preferences:

Step 1 - Setting Up Menu Options

1. SWITCH the mains power on to initialize the controller hardware set-up sequence.

   Note: Always allow the initialization process to complete. With the by-pass blocks in place press the PROCESS button to return to the initial power up screen.

2. PRESS MENU ☰ button to go to the next screen to activate the set up menu sequence.

   A series of set-up screens will now be displayed. Various control icons are used to allow you to step through the set-up instruction process. These icons include:

   - A “scroll” icon indicated by an arrow ↻
   - An “accept” icon indicated by a tick ✓
   - A “selection” icon indicated by a ◂

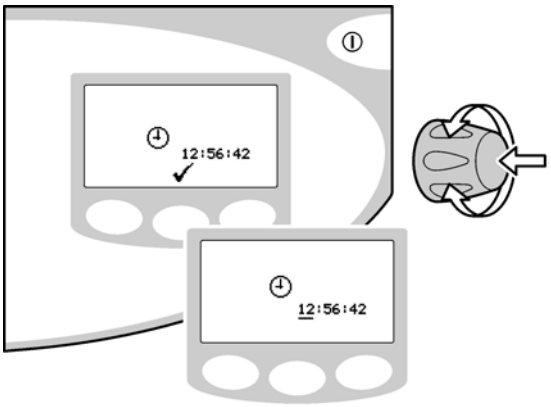
   At any stage during the Controller Set-up the PROCESS button can be pressed to escape back to the initial power up screen.

Step 2 - Password

Restricts access to set up menu sequence.

1. ROTATE Dispense Controller to enter password code. The default password code is 000.
2. PRESS TICK ✓ button.

   Note: To reset password refer to Section 5.5.

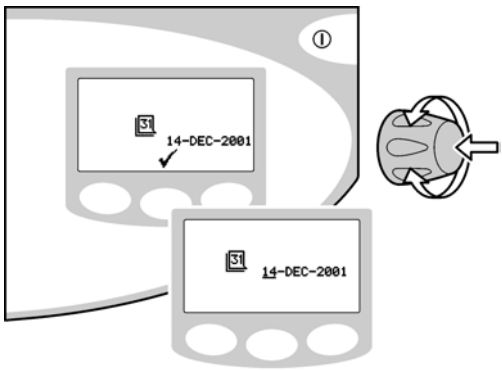


Clock Screens

Step 3 - Clock

Set to display the current local time.

1. PRESS Dispense Controller. A cursor will appear under hour.
2. ROTATE Dispense Controller to increase or decrease hour.
3. PRESS Dispense Controller to step cursor onto minute.
4. ROTATE Dispense Controller to increase or decrease minute.
5. PRESS Dispense Controller to accept the minute setting and set the seconds to 00.
6. PRESS TICK ✓ button.

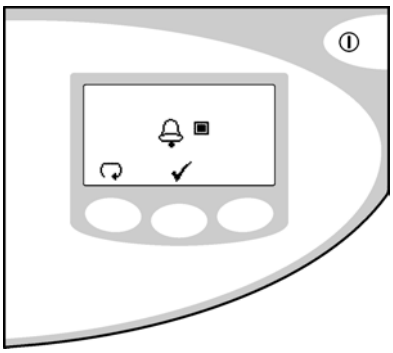


Date Screen

Step 4 - Date

Used to instigate change reminders, it will appear on printed records.

1. PRESS Dispense Controller. A cursor will appear under day.
2. ROTATE Dispense Controller to increase or decrease day.
3. PRESS Dispense Controller to step cursor onto month.
4. ROTATE Dispense Controller to increase or decrease month.
5. PRESS Dispense Controller to step cursor onto year.
6. ROTATE Dispense Controller to increase or decrease year.
7. PRESS TICK ✓ button.



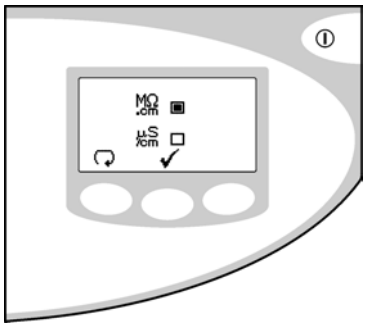
Audible Alarm Enable/Disable Screen

Step 5 - Audible Alarm Enabled/Disabled

This display provides the option of either enabling the audible alarm, causing it to sound (whilst the alarm icon flashes) or disabling the audible alarm causing it to remain muted.

1. PRESS SCROLL ↻ button to highlight box.
2. PRESS TICK ✓ button.

Note: The visual alarm cannot be disabled.

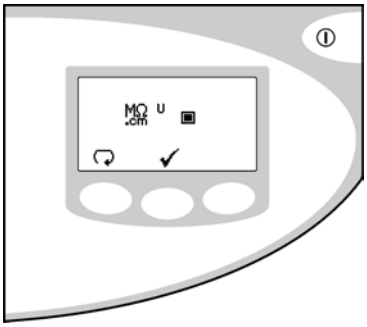


Water Purity Unit Setting Screen

Step 6 - Water Purity Unit Setting

This screen allows preferred units of water purity to be set, to either, **MΩ.cm** or **µS/cm**.

1. PRESS SCROLL ↻ button to highlight appropriate box.
2. PRESS TICK ✓ button.



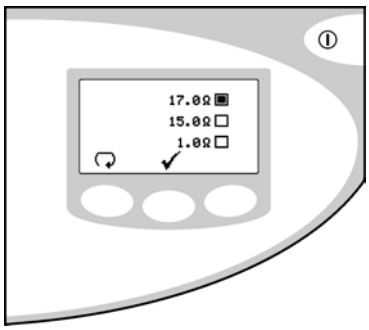
Uncompensated Water Quality Screen

Step 7 - Uncompensated Water Quality

A **U** will indicate uncompensated readings in the normal process screen.

1. PRESS SCROLL ↻ button to highlight box if uncompensated reading is required.
2. PRESS TICK ✓ button.

Note: The on-going display of uncompensated values is generally not recommended as it can lead to confusion among users and increase the possibilities of dispensing water of inadequate purity.

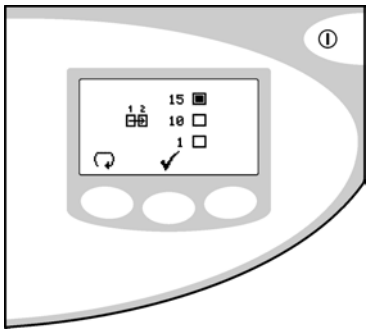


Outlet Purity Alarm Setting Screen

Step 8 - Product Water Purity Alarm Settings

This screen is used for setting the purity value at which the product water purity alarm will activate. The unit will alarm if this level is passed but will not switch off the process. The alarm will automatically clear if the water purity returns above its specified limit.

1. PRESS SCROLL ↻ button to highlight appropriate box.
2. PRESS TICK ✓ button.

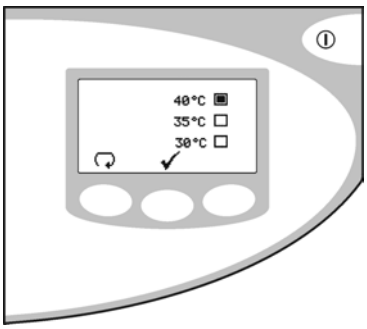


Intermediate Purity Alarm Point Screen

Step 9 - Intermediate Purity Alarm Point

This screen is used for setting the value at which the intermediate water purity alarm will activate indicating that the purification packs require changing. The unit will alarm if this value is passed but will not switch off the process.

1. PRESS SCROLL ↻ button to highlight appropriate box.
2. PRESS TICK ✓ button.

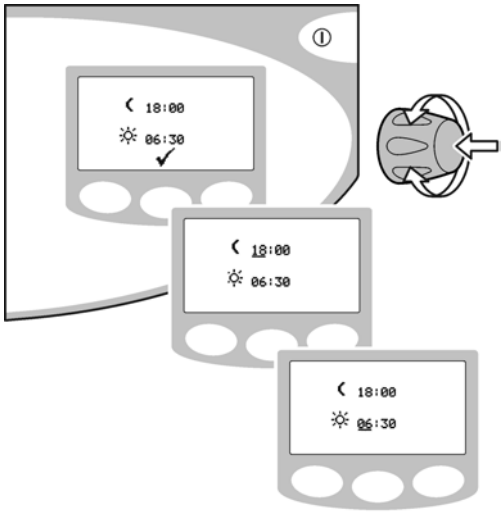


Temperature Alarm Setting Screen

Step 10 - Temperature Alarm Setting

The temperature of the water is constantly monitored to ensure that it does not increase to an unacceptable level. The ***PURELAB Ultra*** will alarm and switch the process off if the alarm point is exceeded.

1. PRESS SCROLL ⟲ button to highlight appropriate box.
2. PRESS TICK ✓ button.



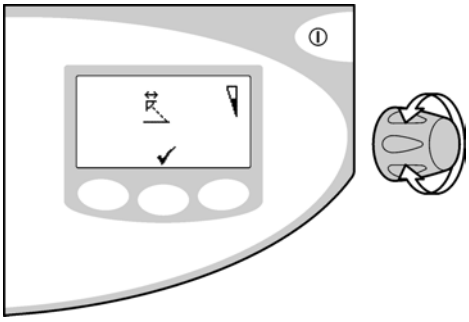
Night Service Setting Screens

Step 11 - Night Service Mode

Night Service Mode will ensure that the unit performs in intermittent recirculation between the hours selected in order to maximize efficiency and reduce the likelihood of heat build up. Upon selection the unit will automatically default to a screen, which will allow times to be set.

1. PRESS SCROLL ⟲ button to highlight appropriate box.
2. PRESS TICK ✓ button. Night Service times should now be displayed.

   Note: If Night Service is not selected the default times will still be displayed. Proceed to instruction 7.
3. PRESS Dispense Controller. A cursor will appear under night service start.
4. ROTATE Dispense Controller to increase or decrease time in increments of 30 minutes.
5. PRESS Dispense Controller to step to night service time end.
6. ROTATE Dispense Controller to increase or decrease time in increments of 30 minutes.
7. PRESS TICK ✓ button.

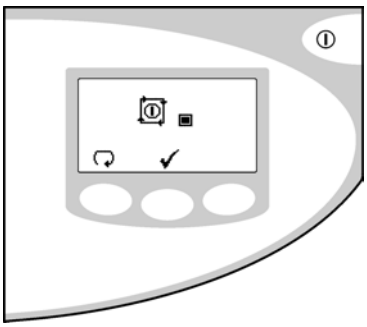


Display Viewing Angle Adjustment

Step 12 - Display Viewing Angle Adjustment

The angle of the display can be electronically adjusted up and down to optimize the display graphics visibility.

1. ROTATE Dispense Controller slowly to adjust viewing angle.
2. PRESS TICK ✓ button.

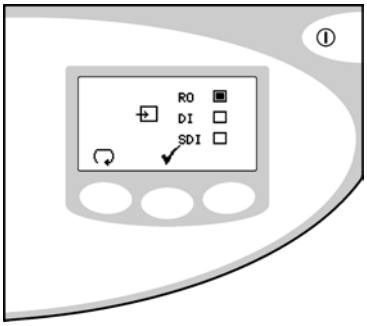


Auto-Restart Screen

Step 13 - Auto-Restart

This allows the selection of the AUTO/MANUAL restart option. If auto restart is selected the unit will automatically restart after a temporary loss of power to the unit. In manual mode the unit will remain in standby mode.

1. PRESS SCROLL button to highlight appropriate box.
2. PRESS TICK ✓ button.



Water Feed Type Screen

Step 14 - Water Feed Type

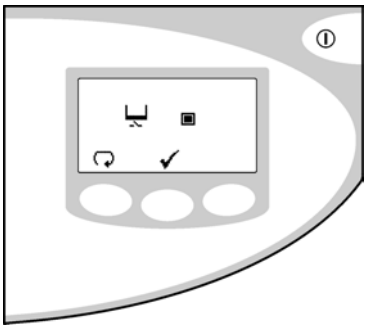
To ensure maximum efficiency the process is tailored for feed waters with different pretreatment.

RO Ideally <30µS/cm and supplied from either an RO (permeate) loop or reservoir.

DI Filtered DI loop or reservoir with recirculation maintaining a quality >1MΩ-cm.

SDI Service Deionisation with 0.2 micron prefilter feed directly into the unit via a pressure regulator (LA575).

1. PRESS SCROLL button to highlight appropriate box.
2. PRESS TICK ✓ button.



Reservoir Level Screen

Step 15 - Reservoir Level (only shown if RO feed is selected)

When operating the system from a reservoir it is recommended that a low-level switch be connected to protect the system from running dry.

1. PRESS SCROLL button to highlight appropriate box.
2. PRESS TICK ✓ button.

The Controller Set-up is now complete.

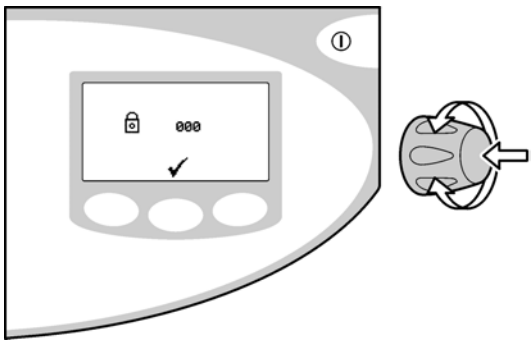
Note: To escape from any of the set-up screens press the PROCESS button.

5.5 Setting Up Password / Resetting Replacement Timers

CAUTION! **Before resetting any of the Consumable Replacement/Reminder Dates, ensure that the appropriate new Consumable has been installed and correctly located in the *PURELAB Ultra.***

Step 1 - Enter Consumable Replacement Timer Set-up

1. SWITCH OFF at power inlet module.
2. PRESS and HOLD left hand button and SWITCH unit back on. The unit will now enter the Consumable Timer set up display.
3. RELEASE left hand button.



Password Screen

Step 2 - Password Change

Note: If you do not wish to change password then proceed to instruction 4.

1. ROTATE Dispense Controller to enter password code. The default password is 000.
2. PRESS Dispense Controller once.
3. ROTATE Dispense Controller to enter new password.
4. PRESS TICK ✓ button to accept new password.

Step 3 - Purification Pack Replacement Date

The replacement date for Purification Packs is automatically calculated from information held on data tags secured to the pack. The information displayed confirms the replacement dates and the serial numbers of the packs that have been installed.

Note: At this stage the unit will not have been fitted with any Purification Packs and the date displayed will not be relevant. Upon installation of the packs this date will be changed and reconfirmed.

1. PRESS TICK ✓ button.

Step 4 - UV Lamp Replacement Date (if fitted)

1. PRESS RESET button to reset UV Replacement Date

OR

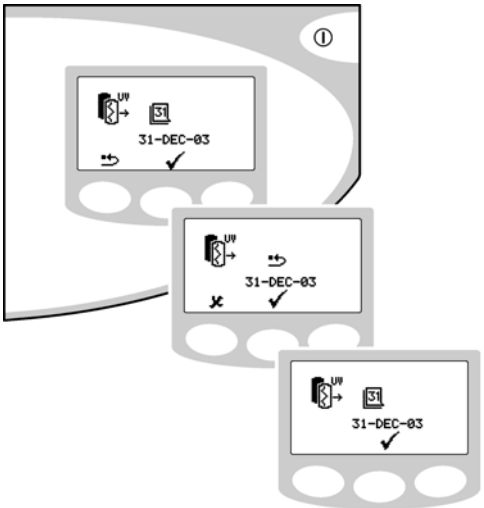
PRESS TICK ✓ button to accept Replacement Date and proceed to Filter Replacement.

2. PRESS TICK ✓ button to confirm that resetting is required

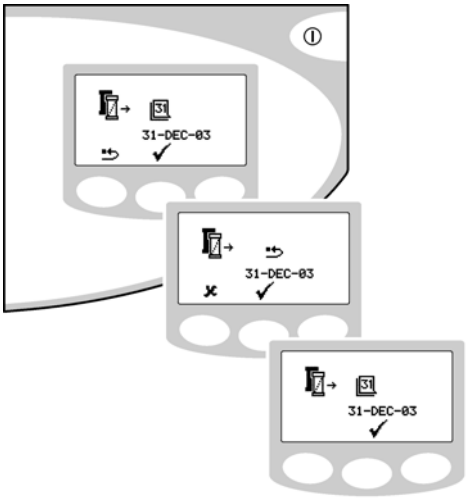
OR

PRESS CROSS χ button to abort reset.

3. PRESS TICK ✓ button.



UV Lamp Replacement Date Screens



Filter Replacement Date Screens

Step 5 - Filter Replacement Date (if fitted)

1. PRESS RESET ⮌ button to reset the Filter Replacement Date

   OR

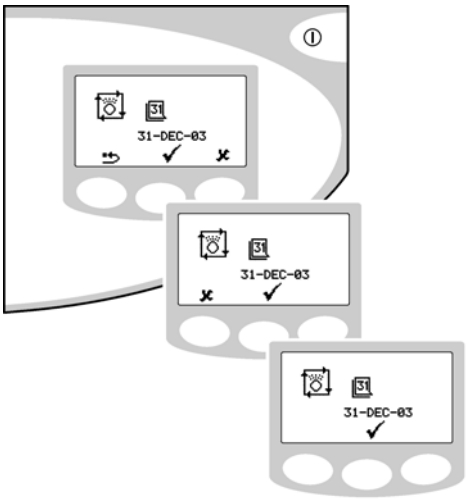
   PRESS TICK ✓ button to accept Replacement Date and proceed to Sanitization Reminder.

2. PRESS TICK ✓ button to confirm that resetting is required

   OR

   PRESS CROSS χ button to abort reset.

3. PRESS TICK ✓button.



Sanitization Reminder Reset Screens

Step 6 - Sanitization Reminder Reset

The Sanitization Reminder will appear at the end of the Sanitization routine and can be either reset for a monthly reminder or switched off.

1. PRESS RESET ⮌ button to reset Sanitization Reminder Date

   OR

   PRESS TICK ✓ button to accept Reminder Date

   OR

   PRESS CROSS χ button to clear the Reminder Date – Proceed to Instruction 3 to confirm.

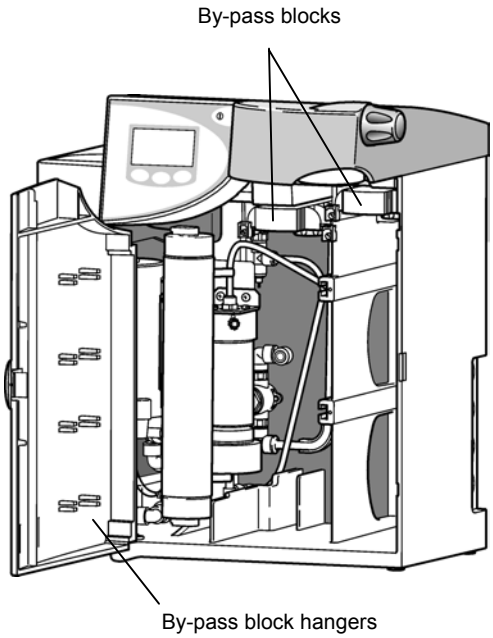
2. PRESS TICK ✓ button to confirm that resetting is required

   OR

   PRESS CROSS χ button to abort reset.

3. PRESS TICK ✓ button.

5.6 Initial Start Up



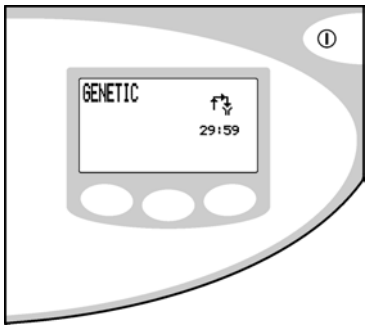
Location of By-pass Blocks

Step 1 - Prepare Water Supply

1. The ***PURELAB Ultra*** should be installed correctly as described in Section 5.3.
2. TURN ON the feedwater supply to the unit and adjust the inlet pressure.
3. CHECK all tube connections are watertight and that there are no leaks.

Step 2 - Prepare Sanitization By-pass Blocks

1. OPEN front door.
2. CHECK by-pass blocks are correctly located and locked in place.
3. CLOSE door.



Initial Rinse Screen

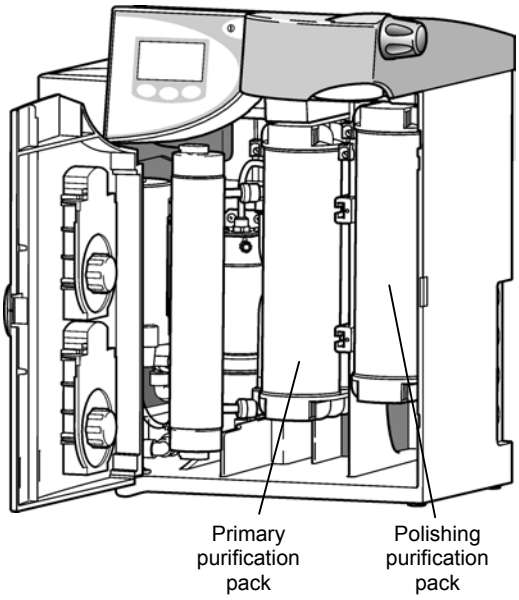
Step 3 - Initial Rinse

1. SWITCH ON electrical supply.

   The ***PURELAB Ultra*** will automatically go into a rinse procedure (36 mins) to rinse bacteriostatic agents from the unit. This rinse must be completed; the process function will be inhibited until the rinse is complete.
2. Upon completion of the rinse the unit will bleep twice.

Step 4 - Remove Sanitization By-pass Blocks

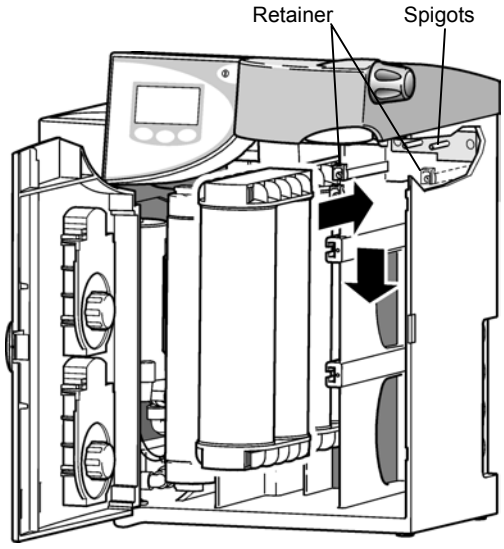
1. SWITCH OFF power.
2. OPEN the door.
3. REMOVE both by-pass blocks and pour contents away.
4. STORE by-pass blocks on hangers inside the door.



Location of Purification Packs

Step 5 - Fit Primary Purification Pack

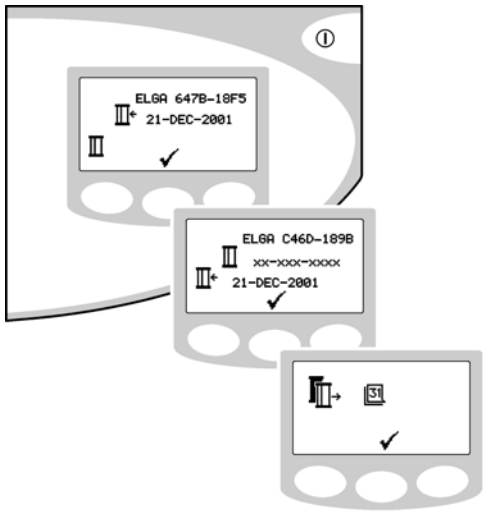
1. REMOVE a new Purification Pack from its packaging.
2. REMOVE the sealing plugs from inlet and outlet ports.
3. WET 'O' rings and SLIDE new Purification Pack into the left hand position pushing upwards against pack reader contacts.
4. POSITION Purification Pack onto spigots.
5. PUSH into unit.
6. ENSURE that the Purification Pack is fully engaged and dropped down past the retainers.



Fit Purification Pack

Step 6 - Fit Polishing Purification Pack

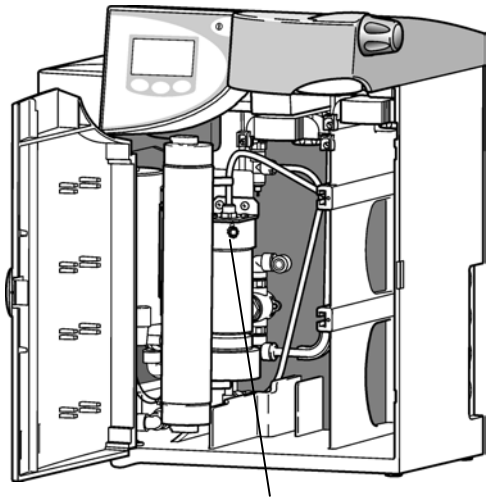
1. REMOVE a new Purification Pack from its packaging.
2. REMOVE the sealing plugs from inlet and outlet ports.
3. WET 'O' rings and SLIDE new Purification Pack into the right hand position pushing upwards against pack reader contacts.
4. POSITION Purification Pack onto spigots.
5. PUSH into unit.
6. ENSURE that the Purification Pack is fully engaged and dropped down past the retainers.



Purification Pack Installation Screens

Step 7 - Acceptance of Purification Pack Installation

1. SWITCH ON power.
2. PRESS TICK ✓ button to initiate programming of Polishing Pack.
3. PRESS TICK ✓ button to accept Polishing Pack Installation date.
4. PRESS TICK ✓ button to initiate programming of Primary Pack.
5. PRESS TICK ✓ button to accept Primary Pack Installation date.
6. PRESS TICK ✓ button to calculate Replacement date.



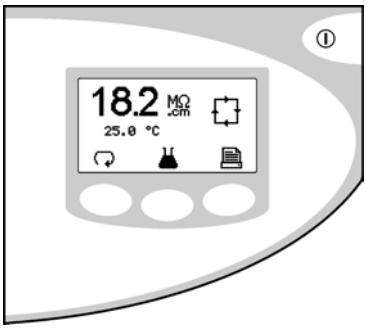
UMF Bleed

Step 8 - Purification Pack Rinse

1. PRESS PROCESS ⓘ button. ALLOW calibration routine to be completed and process screen to appear.
2. PRESS Dispense Controller. DIRECT dispense flow to drain or collect in suitable container (≈ 10 liters).
3. ROTATE Dispense Controller and INCREASE the dispense rate to maximum.

   Note: The unit will start and initially during this stage air/water will be purged from the unit via the dispenser and the drain line.
4. ALLOW to dispense for 4 minutes.
5. RELEASE air from UMF (Analytic and Ionic) by carefully opening the air bleed located at the top of the UMF Filter.

   Note: Place an absorbent cloth around the air bleed to catch any water that is expelled with the air.
6. PRESS Dispense Controller to stop dispense.

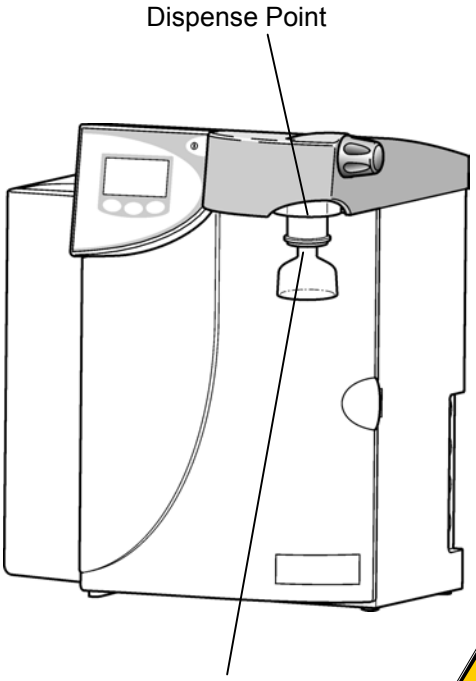


Normal Operation Screen

Step 9 - Normal Operation

Once product water quality is of a suitable standard it can be used, although it will usually require recirculation overnight to achieve peak quality.

5.7 POU Filter Installation (LC134) - Optional Accessory



Location of POU Filter

The POU filter is necessary with the ***PURELAB Ultra*** **Scientific** to ensure it meets the specification for particles and bacteria.

The remainders of the range all incorporate internal filtration and do not require a POU filter to achieve specification when operated as described in this manual. However, a POU may be used to achieve additional Laboratory specific application requirements.

Step 1 - POU Filter Installation

1. LOCATE the fixed dispense point and UNSCREW the nozzle.
2. ENSURE 'O' ring seal is still properly located.

Step 2 - Replace POU Filter

1. REMOVE new filter from its packaging.
2. SCREW filter hand tight into the fixed dispenser until resistance against the 'O' ring seal is felt.

CAUTION! Do not over-tighten

3. PUSH clear bell cover supplied with the filter onto the outlet of filter.

Step 3 - Bleed POU Filter

1. SWITCH on the ***PURELAB Ultra***.
2. PRESS PROCESS ⏻ button.
3. PLACE a beaker under the dispenser.
4. PRESS Dispense Controller button
5. SLACKEN the top air bleed valve until water pours from the bleed valve then close.
6. DISPENSE at full flow for about 5 minutes.
7. DISCARD water.

6. OPERATION

The ***PURELAB Ultra*** units have the following modes of operation:

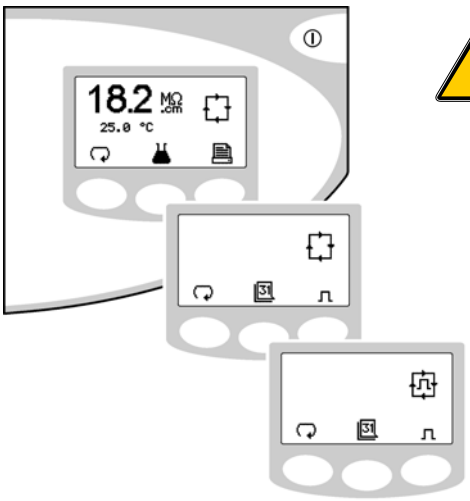
- Intermittent or Continuous Recirculation
- Manual Dispense
- Volumetric Dispense
- Automatic Calibration
- Water Supply Flush
- Sanitization Cycle (See Section 8 – Sanitization Procedure)

6.1 Intermittent or Continuous Recirculation

Intermittent recirculation is the default setting for the unit, it will circulate the water for 10 minutes every 60 minutes in whisper mode. To switch to recirculation mode between these periods press the PROCESS ⏻ button.

If the unit is set to continuous recirculation, it will constantly recirculate the water unless otherwise set in Night Service. See Section 5.4 (Step 11) - Night Service Mode.

Between the Night Service set times the unit will run in Intermittent recirculation.



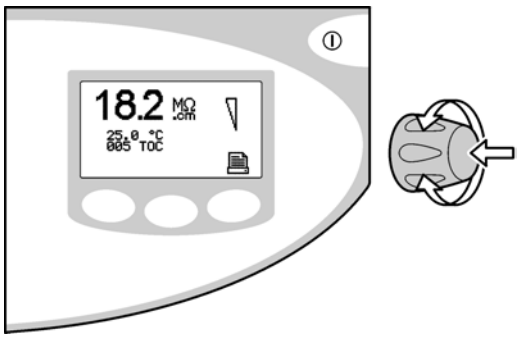
Intermittent or Continuous Recirculation Screens

CAUTION! **If the PROCESS ⏻ button is double clicked the unit will switch off.**

Step 1 - Changing Recirculation Mode

1. ENSURE ***PURELAB Ultra*** is in process mode.
2. PRESS Scroll button once.
3. PRESS INTERMITTENT button to select either continuous or intermittent operation.

   Note: If the Intermittent icon is visible in the recirculation box on the screen the unit will operate in the Intermittent mode. If the icon is not present the unit will operate continuously.
4. PRESS PROCESS ⏻ button once to return to normal operation screen.



Manual Dispense Screen

6.2 Manual Dispense

Step 1 - Product Quality

1. ENSURE ***PURELAB Ultra*** is in recirculation mode and the water quality is satisfactory.

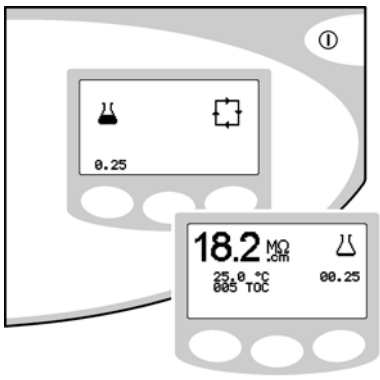
Step 2 - Dispense

1. PRESS Dispense Controller once.
2. ROTATE Dispense Controller clockwise.

   If the Dispense Controller is not rotated within 15 seconds the unit will revert to recirculation mode.
3. ADJUST the flow from the unit by rotating the Dispense Controller as necessary.

   *Note: To prevent accidentally leaving the unit on continuous droplet dispense the **PURELAB Ultra** will only dispense for a maximum of 4 minutes from the last turn of the Dispense Controller. For large volumes it is recommended that the Volumetric Dispense mode be used. See Section 6.3 - Volumetric Dispense.*
4. PRESS Dispense Controller once to stop dispensing and return to recirculation mode.

6.3 Volumetric Dispense



Volumetric Dispense Screens

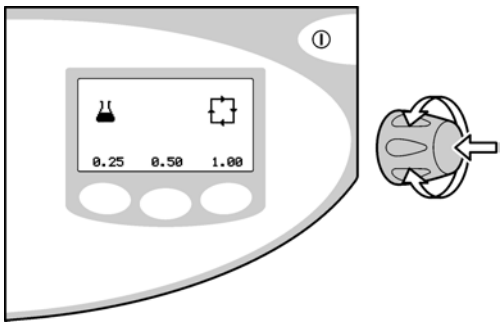
Step 1 - Product Quality

1. ENSURE ***PURELAB Ultra*** is in recirculation mode and the water quality is satisfactory.
2. POSITION suitable receptacle under fixed dispenser.

Step 2 - Dispense Required Volume

1. PRESS Volumetric Dispense button.
2. SELECT required volume (litres).
3. The ***PURELAB Ultra*** will dispense the selected volume into the receptacle and the display will show the volume remaining to dispense completion. On completion of the Volumetric Dispense the unit will bleep to confirm the cycle has finished. The unit will automatically return to recirculation mode.

   Note: To interrupt a volumetric dispense either press the process button or press the dispense controller.



Dispensed Volume Adjustment Screen

Step 3 - Dispensed Volume Adjustment

As supplied, the unit is preset with 3 selectable volumes. These can be changed to suit user requirements.

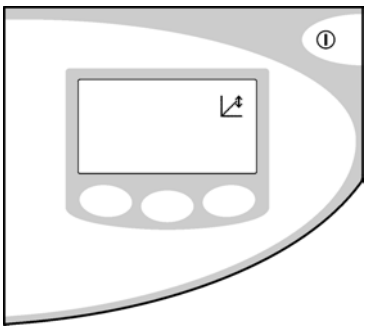
1. PRESS Volumetric Dispense button.
2. PRESS Dispense Controller once.

   The screen will now show just one dispense volume, in liters, above left-hand button.
3. ROTATE Dispense Controller to increase or decrease displayed volume (volumes available are - 0.1, 0.2, 0.25, 0.5, 1, 1.25, 1.5, 2, 2.5, 3, 4, 5, 10, 15, 20, 30, 40, 50, 60).
4. PRESS Dispense Controller once to accept selected volume.
5. REPEAT steps 2 to 4 to set the values for the other two buttons.

   The unit will default back to the normal process screen if no selection is made after 15 seconds.

   Note: A 'new' volume cannot be dispensed until step 5 is completed.

6.4 Automatic Calibration



Automatic Calibration Screen

PURELAB Ultra will perform Automatic Calibration to Traceable Resistors at the beginning of recirculation for approx. 5 seconds.

This operation confirms that the unit is performing within acceptable measuring parameters. If the performance criteria is not achieved the unit will alarm to notify the operator.

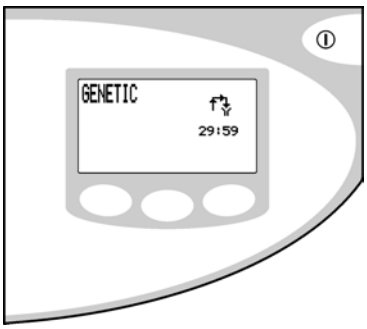
Upon muting the alarm the unit will continue to operate as normal but the operator should confirm that the water quality is acceptable using a suitably calibrated external water quality meter.

If the fault continues to occur then contact your local Service Department.

6.5 Water Supply Flush

The system has been designed to accept a variety of pretreated water supplies and the Water Supply Flush is tailored to ensure that each type of supply does not have unacceptable levels of impurities.

CAUTION! **If the 'Feed Type' is not correctly set the performance of the unit may be severely affected. See Section 5.4 Step 13 - Feed Water Type.**



Water Supply Flush Screen

The remaining duration of Water Supply Flush is displayed on the screen. For the Bioscience and Genetic models this will be followed immediately by a flush of the UF.

All versions of the ***PURELAB Ultra*** will flush on initial power up and every 6 hours thereafter.

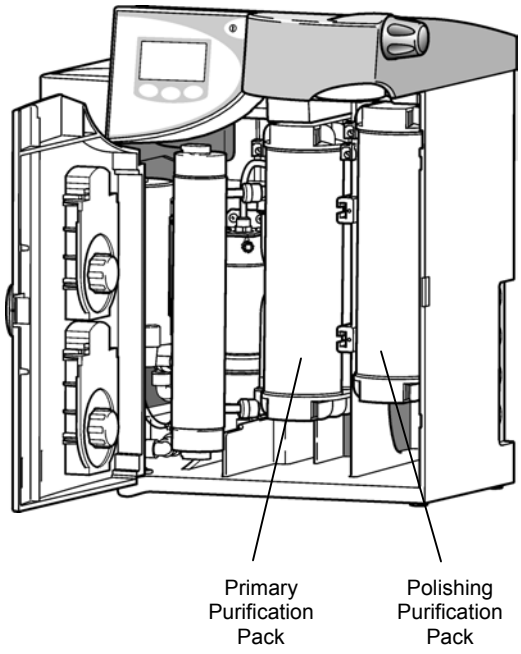
Prior to the end of 'Night Service' the unit will perform an extended flush. If the 'Night Service' mode is not initiated then the unit will perform the extended flush at 7am.

All flush cycles can be interrupted and normal operation resumed by pressing the process button.

7. MAINTENANCE

Any maintenance work not detailed in this handbook should be carried out by an approved supplier or distributor. If further information is required on any aspect of maintenance please contact Customer Service.

WARNING! ALWAYS CHECK THAT THE MAINS ELECTRICAL POWER AND FEED WATER SUPPLIES ARE SWITCHED OFF BEFORE ATTEMPTING TO CHANGE A CONSUMABLE ITEM.



Location of Purification Packs

7.1 Replacing the Purification Packs

The primary Purification Pack should be replaced in the following circumstances:

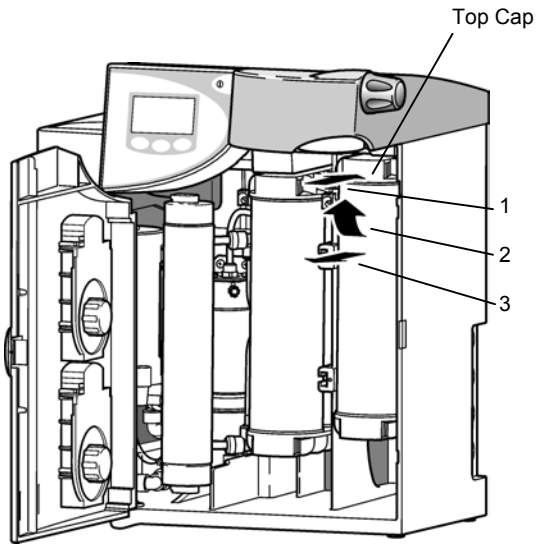
- The intermediate quality monitor indicates that the pack requires changing. The default alarm setting is 15MΩ-cm for Analytic or Genetic and 1MΩ-cm for all other models.
- If the system is being recommissioned or sanitized after an extended period during which it was not used.
- If it has exceeded 6 months use as indicated by the consumable reminder alarm.

Step 1 - Switch Unit Off

1. SWITCH OFF ***PURELAB Ultra*** at the power inlet module.
2. ISOLATE inlet water supply.
3. REMOVE POU filter, if fitted.
4. OPEN the front door.

Step 2 - Remove the Primary Purification Pack (Left hand)

1. PUSH on Purification Pack top cap.
2. LIFT up Purification Pack.
3. SLIDE out Purification Pack.
4. DISCARD used primary Purification Pack.



Removal of Purification Pack

Step 3 - Remove Polishing Purification Pack (Right hand)

1. PUSH on Purification Pack top cap.
2. LIFT up Purification Pack.
3. SLIDE out Purification Pack.

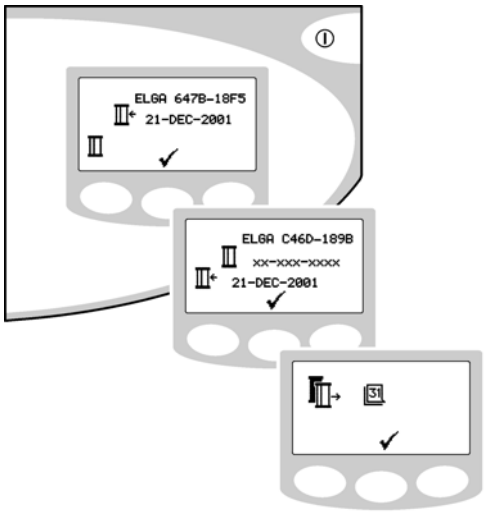
Note: DO NOT DISCARD THIS PACK. It should now be fitted into the primary position.

Step 4 - Replace Primary Purification Pack

1. SLIDE Purification Pack removed from the right hand position into the left-hand position.
2. POSITION Purification Pack onto spigots.
3. PUSH into unit.
4. ENSURE that the Purification Pack is fully engaged and dropped down past the pack retainers.

Step 5 - Fit New Polishing Purification Pack

1. REMOVE a new Purification Pack from its packaging.
2. REMOVE the sealing plugs from inlet and outlet port.
3. WET 'O' rings and SLIDE new Purification Pack into the right hand position.
4. POSITION Purification Pack onto spigots.
5. PUSH into unit.
6. ENSURE that the Purification Pack is fully engaged and dropped down past the pack retainers.



Purification Pack Installation Screen

Step 6 - Acceptance of Purification Pack Installation

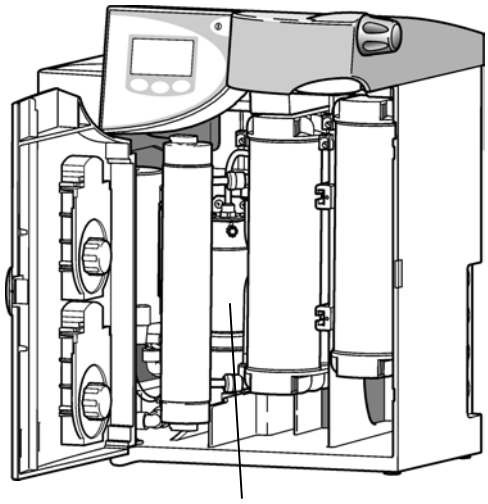
1. SWITCH ON power.
2. PRESS TICK ✓ button to accept Pack 1 Installation date (Primary).
3. PRESS TICK ✓ button to accept Pack 2 Installation date (Polishing).
4. PRESS TICK ✓ button to calculate Replacement date.

Step 7 - Rinse Purification Packs

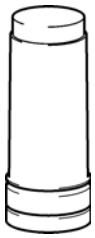
1. PRESS PROCESS ⓘ button.

   The unit will start. Allow the unit to complete its initial start up routine and for the display to show the recirculation icon.
2. POSITION a container under the dispense outlet.
3. PRESS the Dispense Controller.
4. ROTATE the Dispense Controller and increase the dispense rate to maximum.

   Note: The unit will start and initially, during this stage, air/water will be purged from the unit via the dispenser and the drain line.
5. DISPENSE water for 5 minutes.
6. PRESS the Dispense Controller to stop dispense and return the unit to recirculation.
7. For optimum performance allow the unit to recirculate continuously overnight.



Location of UMF



Ultra-Microfilter LC109

7.2 Replacing the Ultra-Microfilter (LC109)

The ***PURELAB Ultra*** Microfilter (UMF) should be replaced in the following circumstances:

- After 6 months as indicated by the consumable reminder.
- Filter becomes blocked or contaminated.
  (This is not to be expected and the possible cause should be considered – see Section 9. Trouble Shooting).

Step 1 - Switch Unit Off

1. SWITCH OFF ***PURELAB Ultra*** at the power inlet module.
2. TURN OFF the water supply.
3. REMOVE POU filter, if fitted.
4. OPEN the front door.

Step 2 - Remove Primary Purification Pack

1. SEE Section 7.1 (Step 2).
2. INSERT By-pass block, but DO NOT add a CT1 tablet. SEE Section 8 (Step 4).

Step 3 - Remove Polishing Purification Pack

1. SEE Section 7.1 (Step 3).
2. INSERT By-pass block, but DO NOT add a CT1 tablet. SEE Section 8 (Step 4).

Step 4 - Remove Old LC109

1. UNSCREW UMF from the top cap.

   Note: The filter body and bottom cap will unscrew together and will rotate on the connection fitted to the bottom cap.
2. POUR water from the UMF housing into a convenient container.
3. HOLD bottom cap and UNSCREW the LC109.
4. DISCARD old LC109.

Step 5 - Ready New UMF

WARNING! THE LC109 IS SUPPLIED CONTAINING AN AQUEOUS SOLUTION OF 0.3% HYDROGEN PEROXIDE AS A BACTERIOSTAT. WEAR PROTECTIVE GLASSES AND GLOVES.

1. UNPACK new LC109 cartridge.
2. REMOVE both end caps.
3. POUR contents to drain with care, flushing drain with water.
4. ENSURE ‘O’ ring is fitted correctly into bottom cap.

Step 6 - FIT New UMF

1. REFIT new LC109 into bottom cap.
2. TIGHTEN until hand tight and resistance against 'O' ring is felt.

CAUTION! **Do not over-tighten.**

3. FIT LC109 cartridge into top cap.

CAUTION! **Ensure filter is not cross-threaded when fitting into top cap.**

4. TIGHTEN until hand tight and resistance against 'O' ring is felt.

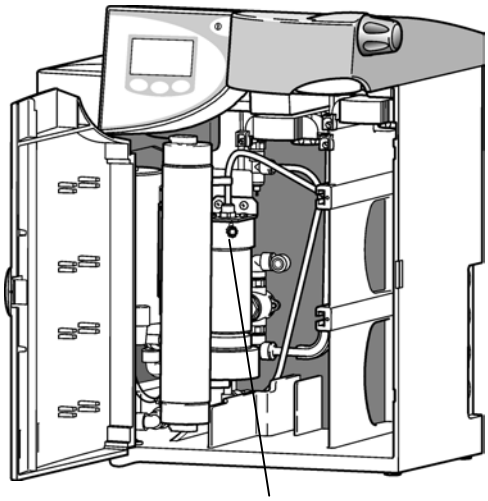
Step 7 - Rinse New UMF

WARNING! **THE NEW UMF FILTER MUST BE RINSED FREE OF BACTERIOSTATIC SOLUTIONS. TO RINSE THE UNIT ENTER THE SANITIZING PROCEDURE, ENSURE THE BY-PASS BLOCKS ARE CORRECTLY FITTED AND THAT NO TABLETS HAVE BEEN INSTALLED.**

1. SWITCH ON power.
2. PRESS FLUSH button.
3. RELEASE air from UMF (Analytic and Ionic) by carefully opening the air bleed located at the top of the UMF Filter.

   Note: *Place an absorbent cloth around the air bleed to catch any water that is expelled with the air.*

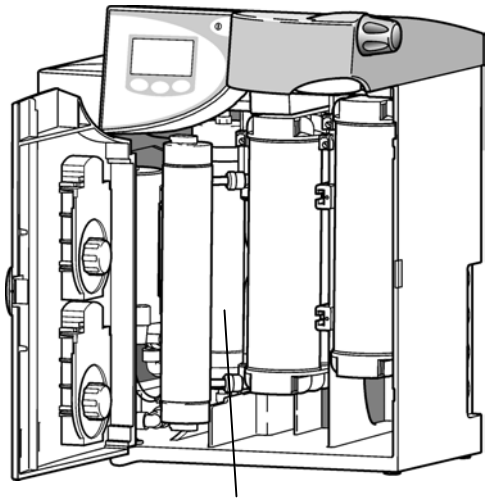
4. CHECK for leakage from UMF.
5. TIGHTEN if necessary.



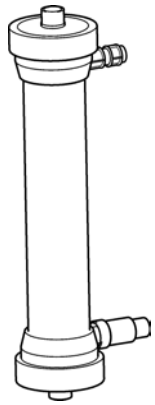
UMF Bleed

Step 8 - Set UMF Pack Change Timer

1. SEE Section 5.5 - Setting Up Password/ Resetting Replacement Timers.



Location of Ultrafilter



Ultrafilter LC151

7.3 Replacing the Ultrafilter (LC151)

The Ultrafilter (UF) should be replaced in the following circumstances:

- If indicated by the consumable reminder alarm.
- When low pyrogen levels can no longer be maintained.
- When the required flow rate can no longer be maintained.

Step 1 - Switch Unit Off

1. SWITCH OFF ***PURELAB Ultra*** at the power inlet module.
2. TURN OFF the water supply.
3. REMOVE POU filter, if fitted.
4. OPEN the front door.

Step 2 - Remove Primary Purification Pack

1. SEE Section 7.1 (Step 2).
2. INSERT By-pass block but DO NOT add a CT1 tablet. SEE Section 8 (Step 4).

Step 3 - Remove Polishing Purification Pack

1. SEE Section 7.1 (Step 3).
2. INSERT By-pass block but DO NOT add a CT1 tablet. SEE Section 8 (Step 4).

Step 4 - Remove the UV

1. SEE Section 7.4 (Step 2).

Step 5 - Remove the UF

1. UNCLIP UF from spring clips.
2. PULL UF forward to allow access to rear connection.
3. PUSH back outer sleeve of quick connect coupling.
4. UNSCREW bottom cap from UF housing.
5. LOCATE a suitable beaker under the UF.
6. UNSCREW the top cap from the UF housing and allow the water to drain into the beaker.
7. REMOVE the UF from the ***PURELAB Ultra.***
8. DRY spilt water from inside the unit.

Step 6 - Ready New UF

1. UNPACK new Ultrafilter.
2. REMOVE the top and bottom caps and discard.

Step 7 - Fit New UF

1. REFIT top and bottom connectors to new UF ensuring the 'O' rings are correctly located.
2. RECONNECT quick connect coupling.

CAUTION! Ensure tubes are fitted to correct ports.

3. CLIP the new UF into spring clips.
4. REFIT the UV housing on securing screws.
5. TIGHTEN securing screws.

Step 8 - Replace the UV

1. SEE Section 7.4 (Step 5).

Step 9 - Rinse New UF

CAUTION! The new Ultra Filter must be rinsed. To rinse the unit enter the Sanitizing Procedure, (see Section 8). Ensure the by-pass blocks are correctly fitted and that NO tablets have been inserted.

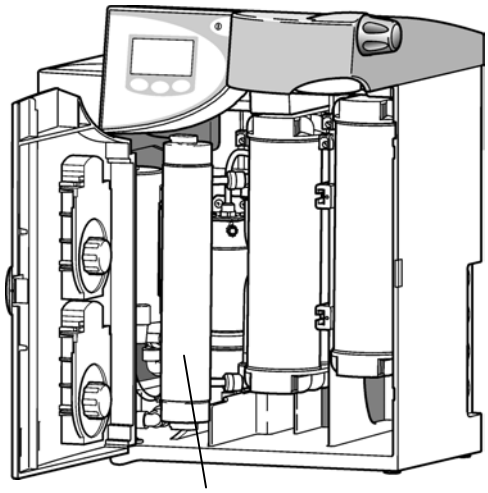
1. SWITCH ON power. The unit will enter sanitization mode.
2. PRESS FLUSH button.

   Note: This rinse must be completed and until complete will inhibit the PROCESS function.

3. CHECK for leakage from the UF.
4. RETIGHTEN if necessary.
5. Ignore the step to reset the sanitization date, PRESS TICK ✓ button.

Step 10 - Set UF Change Reminder

1. SEE Section 5.5 - Setting Up Password/ Replacement Timers.



Location of Ultraviolet Lamp

7.4 Replacing the Ultraviolet Lamp (LC105 and LC118)

The UV lamp should be replaced in the following circumstances:

- If indicated by the consumable reminder alarm, after 12 months use, due to the decline in the short wave radiation used to destroy the micro-organisms and to oxidize organics.
- If Lamp Fail Alarm occurs repeatedly.

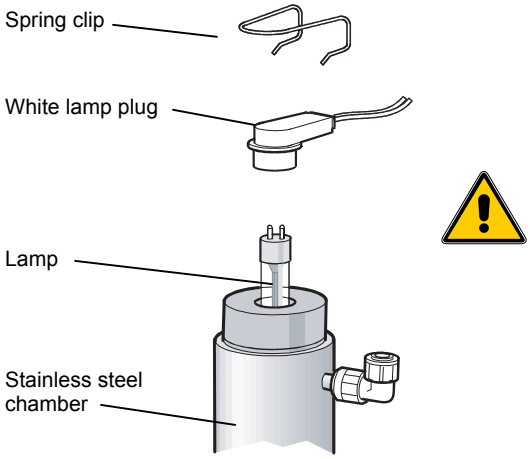
Step 1 - Switch Unit Off

1. SWITCH OFF ***PURELAB Ultra*** at the power inlet module.
2. TURN OFF the water supply.
3. REMOVE POU filter, if fitted.
4. OPEN the front door.

Step 2 - Remove UV from *PURELAB Ultra*

1. LOOSEN two securing screws, which retain UV housing.
2. LIFT and REMOVE UV housing from the securing screws.
3. REMOVE top and bottom retaining clips.
4. UNPLUG the white lamp clip fitted to the bottom of the UV unit.

CAUTION! **Hold on to the pins on the lamp in case it falls out and breaks.**

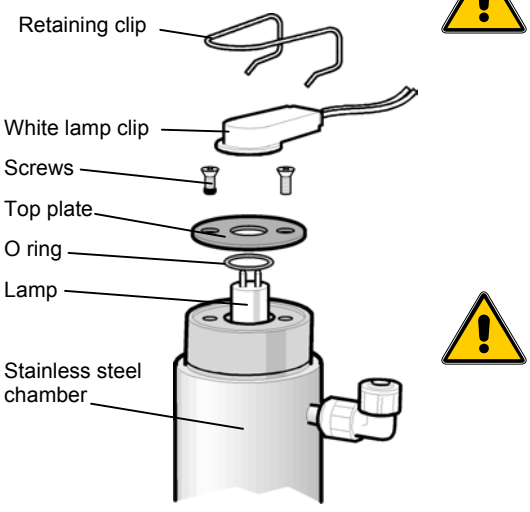


LC105 Lamp

Step 3 - Remove Lamp Plates (LC118 only)

1. UNDO screws in plate at top.
2. REMOVE plate at top.
3. UNDO screws in plate at bottom.
4. REMOVE plate at bottom.
5. REMOVE 'O' rings from the UV lamp and retain.

CAUTION! **Hold on to UV lamp whilst removing plates to ensure it does not fall out and break.**



LC118 Lamp

Step 4 - Remove UV Lamp (LC105 and LC118)

1. REMOVE old UV lamp from the centre bore of the housing.

Step 5 - Replace UV Lamp (LC105 and LC118)

1. UNPACK new UV lamp.

CAUTION! **Take care not to touch the surface of the glass. Ideally wear gloves, handle with soft cloth and wipe the surface with alcohol before fitting into the housing.**

1. SLIDE the new UV lamp into the centre bore of the UV housing.
2. Note orientation of pins on each end.

Step 6 - Replace Lamp Plates (LC118 only)

1. REPLACE 'O' rings on the end of the UV lamp.
2. PUSH 'O' rings into recesses.
3. REFIT plate on the bottom of the unit.
4. TIGHTEN screws on the plate.
5. FIT plate on top of UV lamp assembly.
6. TIGHTEN screws on top plate.

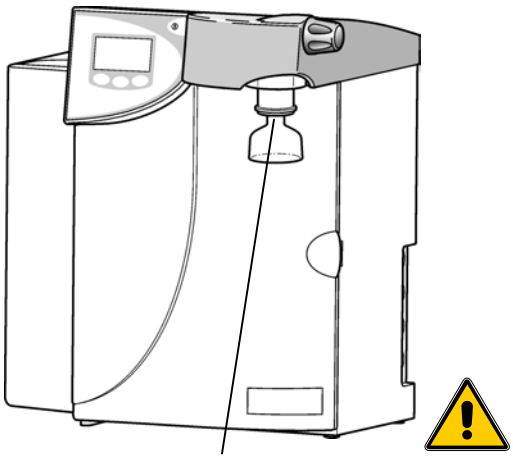
Step 7 - Assemble UV (LC105 and LC118)

1. PLUG the white lamp clip into the bottom of the UV unit.
2. REFIT spring clip.
3. PLUG in the white lamp clip into the top of the UV unit.
4. REFIT spring clip.
5. REFIT the UV housing on securing screws.
6. TIGHTEN securing screws.

Step 8 - Set UV Change Reminder

1. SEE Section 5.5 - Setting Up Password/ Resetting Replacement Timers.

7.5 Replacing the Point-Of-Use Filter (LC134)



Location of POU Filter

Step 1 - Remove POU Filter

1. UNSCREW the old filter from the fixed dispenser and discard.
2. ENSURE 'O' ring seal is still properly located.

Step 2 - Replace POU Filter

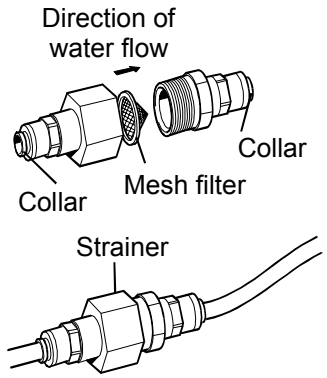
1. REMOVE new filter from its packaging.
2. SCREW filter hand tight into the fixed dispenser until resistance against the 'O' ring seal is felt.

CAUTION! Do not over-tighten.

3. PUSH clear bell cover supplied with the filter onto the outlet of filter.

Step 3 - Bleed POU Filter

1. SWITCH ON the ***PURELAB Ultra.***
2. PRESS process.
3. PLACE a beaker under the dispenser.
4. PRESS Dispense Controller button.
5. SLACKEN the top air bleed valve until water pours from the bleed valve then close.
6. DISPENSE at full flow for about 5 minutes.
7. DISCARD water.



Inlet Strainer

7.6 Cleaning the Inlet Strainer (External)

The Inlet Strainer should be checked and cleaned every six months to ensure that the strainer does not become clogged.

Step 1 - Remove the Inlet Strainer

1. SWITCH OFF electrical supply.
2. ISOLATE inlet water supply.
3. HOLD inlet strainer over a sink or receptacle.
4. DEPRESS collars on both sides of strainer and disconnect tubing.
5. REMOVE the inlet strainer from its position.

Step 2 - Dismantle the Inlet Strainer

1. HOLD inlet strainer over a sink or receptacle.
2. UNSCREW inlet strainer.
3. REMOVE mesh filter.
4. CHECK mesh filter for signs of wear or damage, replace or clean as necessary.

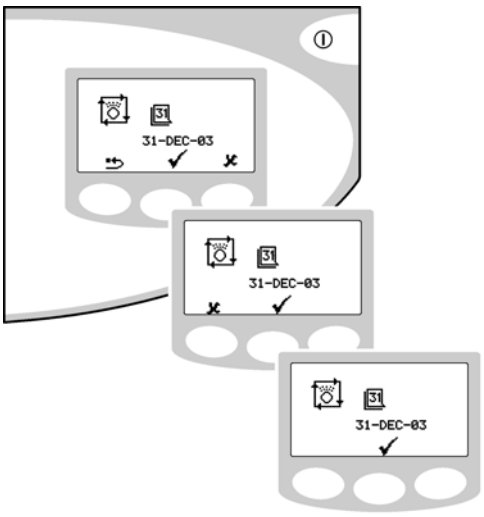
Step 3 - Reassemble the Inlet Strainer

1. INSERT mesh filter into strainer, ENSURE it is facing the correct direction (see diagram).
2. RE-ASSEMBLE the inlet strainer.

Step 4 - Replace the Inlet Strainer

1. REPOSITION the inlet strainer.
2. REFIT tubes to inlet strainer, ENSURE it is facing the correct direction.
3. RE-ESTABLISH inlet water supply.
4. SWITCH ON power.

8. SANITIZATION PROCEDURES



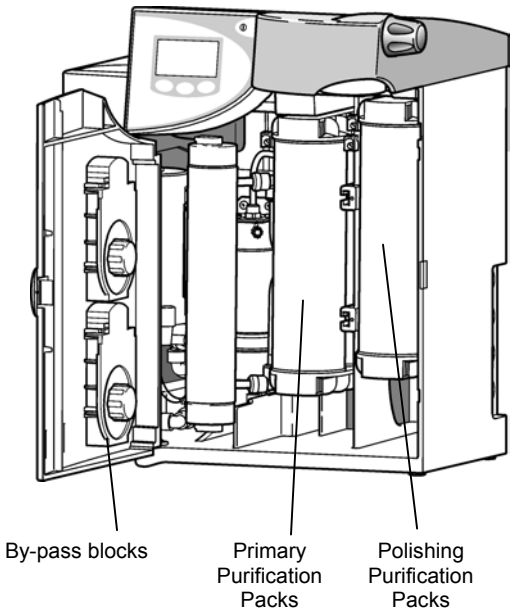
Screens

The unit is sanitized to destroy the bacteria within the pipework, and the filters of the unit. Please read this entire section to become familiar with the procedure before you start. Sanitization may be required in the following circumstances:

- Once a month to maintain low bacterial counts
- If the unit has not been used for a prolonged period of time
- If the product water is used for particularly stringent applications

Step 1 - Start Sanitization Cycle

1. ENSURE unit is ready to use.
2. SWITCH OFF electrical supply.
3. REMOVE POU filter, if fitted.
4. OPEN the door.



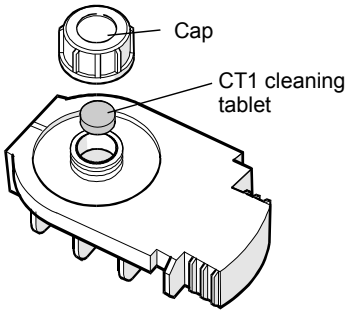
Location of By-pass Blocks inside Door

Step 2 - Insert Tablet into One Sanitization By-pass Block Only

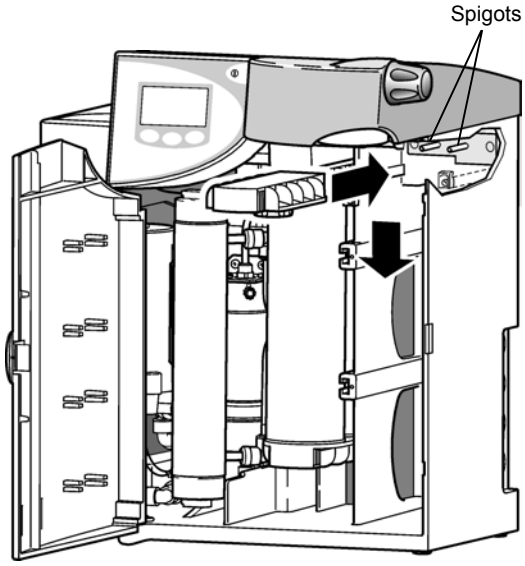
1. REMOVE one of the two by-pass blocks from the inside of the door.
2. INVERT the by-pass block.
3. UNSCREW cap on sanitization by-pass block.
4. INSERT CT1 cleaning tablet.
5. REFIT cap on by-pass block, hand tight.

Step 3 - Remove Both Purification Packs

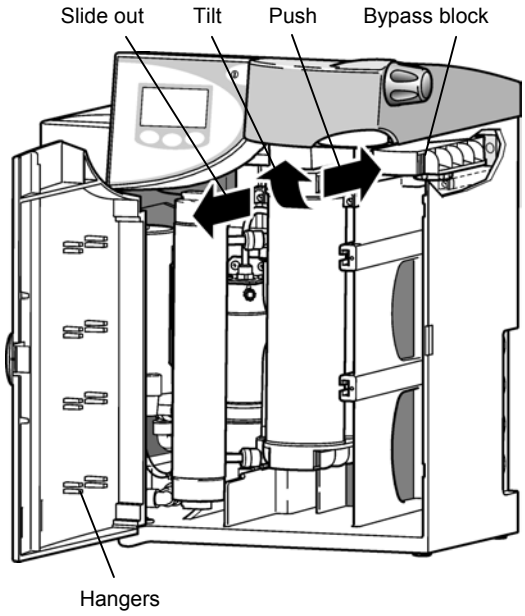
1. REMOVE Polishing Purification Pack. (See section 7.1).
2. REMOVE Primary Purification Pack. (See section 7.1).
3. PLACE Purification Packs safely to one side.



Insert CT1 Cleaning Tablet



Fit By-pass Block



Remove By-pass Block

Step 4 - Fit Both By-pass Blocks

1. WET 'O' rings on by-pass blocks.
2. SLIDE by-passes into unit.
3. POSITION both by-passes onto appropriate spigots.
4. ENSURE each by-pass is locked in place.
5. SWITCH ON power.

*Note: The **PURELAB Ultra** will automatically sense that the bypasses are fitted and default to the sanitization cycle.*

6. ACCEPT starting the sanitization cycle.

   The ***PURELAB Ultra*** will recirculate for 10 minutes. The unit will then proceed to alternatively rinse to drain and recirculate for a total of 44 minutes. Upon completion the alarm will sound for 4 seconds.

   The sanitization cycle is now complete and the unit will now display the next sanitization reminder alarm date.

Step 5 - Remove By-pass Blocks

1. PUSH and TILT by-pass blocks.
2. SLIDE out of unit.
3. PLACE on hangers located inside the door.

Step 6 - Replace Purification Packs

1. INSERT Primary Purification Pack into left-hand side (lower position).

   Allow the ***PURELAB Ultra*** to recognize the Purification Pack and ensure that it has been replaced into the correct position.

2. INSERT Polishing Purification Pack into right hand side of the compartment (upper position).

   Allow the ***PURELAB Ultra*** to recognize the Purification Pack and ensure that it has been replaced into the correct position.

3. ENSURE Purification Packs are locked into position.
4. CLOSE front door.

Step 7 - Return to Normal Operation

1. PRESS PROCESS ⓘ button twice.

   The unit has now been sanitized but should be allowed to rinse to a suitable quality. For particularly sensitive applications it is recommended that this occur overnight.

   *Note: Once a sanitization cycle has commenced the **PURELAB Ultra** cannot be used to purify water until the cycle has been totally completed. If the electricity supply to the **PURELAB Ultra** is interrupted whilst the cycle is in process, when it is restarted the unit will resume sanitization at point of interruption.*

   *After sanitization the **PURELAB Ultra** will default to continuous recirculation for a twelve-hour period.*

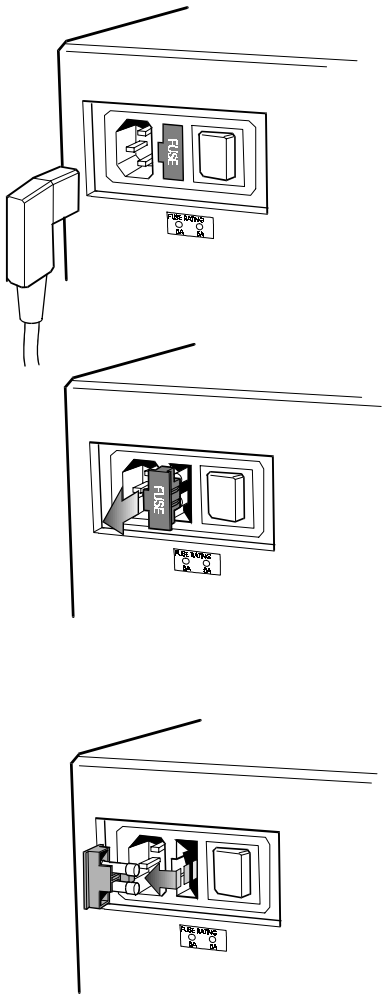
8.1 CT1 Sanitization Tablet - Safety Information

General Description:	White solid tablet, which rapidly dissolves in water, used for sanitization applications.
Hazard Assessment:	Contains sodium dichloroisocyanurate dihydrate, and is therefore toxic by inhalation, injestion and skin contact.
Properties:	Soluble in water, pH6, Non-combustible.
Handling Precautions:	Keep container tightly closed in a dry place. Wear protective clothing when handling.
Spillages:	If tablets are dry and uncontaminated collect up and place in heavy duty plastic bag. Do not return to original container. Wash away any residues with copious amounts of water.
Toxicity:	Serious risk of poisoning by inhalation or injestion. Irritating to skin, eyes and respiratory system.
First Aid:	**Eyes** - thoroughly wash out with clean water for at least 15 minutes. Seek medical advice.
	Inhalation - remove from exposure, rest and expose to fresh air. In severe cases, obtain medical attention and treat for acute chlorine poisoning.
	Skin - drench the skin with plenty of water. Remove contaminated clothing and wash before reuse. In severe cases, obtain medical advice.
	Mouth - wash out the mouth thoroughly with water and give large quantity of milk to drink. Obtain medical advice.

Note: A comprehensive Data Sheet is available on request and is supplied with each packet of tablets.

9. TROUBLE SHOOTING

This section highlights the problems that could occur with the ***PURELAB Ultra*** unit and how to rectify them. The unit will normally sound an alarm and the respective icons will flash. The alarm sound can be silenced by pressing the mute button. If the problem cannot be solved using this manual please call either your supplier or the local distributor. *(See Section 13.0 - Useful Addresses).*



Fuse Removal

Problems	Action
No display message	Check mains supply and lead. Check that the mains power is switched on. Check fuses in power inlet module and replace if blown.
Alarm and Flashing Quality value	Mute alarm. Check alarm set value is correct. See Section 5.4 Step 8 - Purity Alarm Settings. Dispense approximately 10 liters of water to drain. If problem persists replace polishing Purification Pack. See Section 7.1 - Replacing the Purification Packs. If problem persists call Customer Services.
=== MΩ.cm	Feature out of measurement range. Allow unit to recirculate. Replace Purification Packs. See Section 7.1 - Replacing the Purification Packs. If problem persists call Customer Services.
=== TOC	Feature out of measurement range. Allow unit to recirculate. If problem persists call Customer Services.
High Water Temperature alarm	Check correct alarm point is set. See Section 5.4 Step 10 - Temperature Alarm Setting. Check feedwater temperature has not risen suddenly. Dispense some water to allow cold water to be drawn into the unit. Operate unit in Intermittent Operation to minimize temperature rises.
Purification Pack Change reminder alarm	Mute Alarm. Replace Purification Pack. See section 7.1 - Replacing a Purification pack.
UMF Change reminder alarm	Mute Alarm. Replace UMF filter. See section 7.2 - Replacing the UMF filter.
UF Change reminder alarm	Mute Alarm. Replace UF filter. See section 7.3 - Replacing the UF filter.
UV Change reminder alarm	Mute Alarm. Replace UV filter. See section 7.4 - Replacing the UV Lamp.
Sanitization reminder alarm	Mute alarm. Initiate Sanitization Procedure. See Section 8 - Sanitization Procedure.
Reservoir Low level alarm	Mute Alarm. Ensure unit is fed from a reservoir and that the correct feature has been set. See Section 5.4 Step 15 - Reservoir Level. Check feed to the reservoir is operational and that the reservoir is filling.
Reservoir level disconnect fault alarm	Mute alarm. Ensure control lead from reservoir is properly connected. **Note:** unit must be powered down to clear alarm.
Reduced flow from dispenser	Check inlet water temperature. Check inlet water strainer. Replace POU filter if fitted. Pump worn, call Customer Services.
Unit Noisy	Open front door and secure pipework to stop vibration.
Unit will not operate	Ensure that the correct Purification Packs are correctly installed. Ensure each Purification Pack has a valid consumable date and that the reminder has not been overrun by 6 months.

10. CONSUMABLES AND ACCESSORIES

Consumable	Max. Service Life*	Max. Shelf Life
LC147 Purification Pack - RO Feed	6 months	2 years
LC148 Purification Pack - SDI Feed	6 months	2 years
LC149 Purification Pack - Low Ionic	6 months	2 years
LC150 Purification Pack - Low TOC	6 months	2 years
LC151 UF	24 months	2 years
LC109 UMF	6 months	2 years
LC105 UV Lamp 254	12 months	5 years
LC118 UV Lamp 185	12 months	5 years
LC134 POU Filter	6 months	2 years
CT1 (Sanitization tablets)	Typical usage 1 per month	2 years
LC136** (Composite Vent Filter)	6 months	2 years

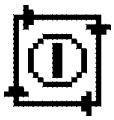
* *Service life is an estimate only, and will depend on the application and feed water quality. Care should be taken to order the correct consumable items.*

** *Required for reservoirs (LA611, LA612, LA613, LA620).*

Accessory	Cat No
Installation kit	LA642
Pressure regulator valve (inlet)	LA575
Wall mounting kit (***PURELAB Ultra*** unit)	LA610
Wall mounting kit US version	LA622
25 liter reservoir	LA611
40 liter reservoir	LA612
75 liter reservoir	LA613
Wall mounting kit (25 & 40 liter reservoir)	LA591
Wall mounting kit (75 liter reservoir)	LA592
Open circuit ringmain kit	LA646
Closed circuit ringmain Kit	LA647
RS232 printer kit	LA618
Ultra remote control station	LA645
Integral dispense gun	LA644
Remote dispense station	LA643
Docking vessel – DV35	LA620
Sanitization block	LA638

11. KEY TO CONTROL PANEL

11.1 Icons

Icon	Description
	Mute Alarm
	Accept
	Scroll
	Auto Restart
	Manual Restart
	Set Up Menu
	Cursor Option Choice
	Cursor Selection Choice
	Cancel
	Reset
	Printer
	Intermittent Recirculation
	Replacement Date

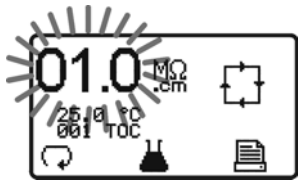
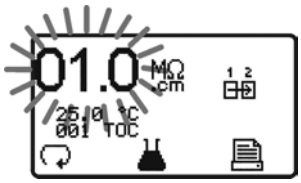
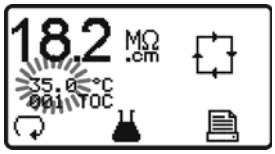
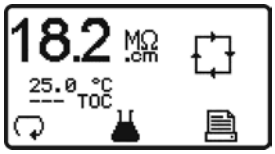
11.2 Alarm Conditions

Icon	Alarm Conditions
(Flashing)	UV Lamp Failure
(Flashing)	Calibration Failure
(Flashing)	Sanitization tablet reminder
(Flashing)	Bypass fitted - warning
(Flashing)	Purification Pack not in place
(Flashing)	Reinstall Purification Pack
(Flashing)	Clock stopped
(Flashing)	Reservoir Level – Disconnect Fault
(Flashing)	Incorrect Password

11.3 Replacement Timers

Icon	Replacement Timer	Preset
	UV Lamp Replacement	1 year
	Purification Pack Replacement	6 months (total pack life 1 year)
	Filter Replacement	UMF - 6 months UF – 2 years

11.4 Quality Alarms

Screen	Description
	Outlet Purity Alarm
	Intermediate Quality Alarm
	Temperature Alarm
	TOC out of range

12. WARRANTY/CONDITIONS OF SALE

ELGA is a trading name of Vivendi Water Systems Ltd.

General Limited Warranty

Vivendi Water Systems Ltd warrants the products manufactured by it against defects in materials and workmanship when used in accordance with applicable instructions for a period of one year from the date of shipment for the products. VIVENDI WATER SYSTEMS LTD MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the Vivendi Water Systems Ltd products appearing in Vivendi Water Systems Ltd's published catalogues and product literature may not be altered except by express written agreement signed by an officer of Vivendi Water Systems Ltd. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorized and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, Vivendi Water Systems Ltd sole obligation shall be to repair or replace, at its option, any product or part thereof that proves to be defective in materials or workmanship within the warranty period, provided the customer notifies Vivendi Water Systems Ltd promptly of any such defect. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as Vivendi Water Systems Ltd is willing and able to repair or replace any nonconforming Vivendi Water Systems Ltd product or part. Vivendi Water Systems Ltd shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by any customer from the use of its products.

Water System Limited Warranty

Vivendi Water Systems Ltd warrants the water systems manufactured by it, BUT EXCLUDING MEMBRANES AND CARTRIDGES, against defects in materials and workmanship when used in accordance with the applicable instructions and within the operating conditions specified for the systems for a period of one year from the earlier of:

a) the date of installation, or
b) the 120th day following the date of shipment.

VIVENDI WATER SYSTEMS LTD MAKES NO OTHER WARRANTY, EXPRESSED OR IMPLIED. THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. The warranty provided herein and the data, specifications and descriptions of the Vivendi Water Systems Ltd systems appearing in Vivendi Water Systems Ltd published catalogues and product literature may not be altered except by express written agreement signed by an officer of Vivendi Water Systems Ltd. Representations, oral or written, which are inconsistent with this warranty or such publications are not authorised and, if given, should not be relied upon.

In the event of a breach of the foregoing warranty, Vivendi Water Systems Ltd sole obligation shall be to repair or replace, at its option, any product or part thereof that proves to be defective in materials or workmanship within the warranty period, provided the customer notifies Vivendi Water Systems Ltd promptly of any such defect. The cost of labor for the first ninety (90) days of the above warranty period is included in the warranty; thereafter, labor cost shall be at the customer's expense. The exclusive remedy provided herein shall not be deemed to have failed of its essential purpose so long as Vivendi Water Systems Ltd is willing and able to repair or replace any nonconforming Vivendi Water Systems Ltd system or component part. Vivendi Water Systems Ltd shall not be liable for consequential, incidental, special or any other indirect damages resulting from economic loss or property damage sustained by any customer from the use of its process systems.

Products or components manufactured by companies other than Vivendi Water Systems Ltd or its affiliates ("Non-Vivendi Water Systems Ltd products") are covered by the warranty, if any, extended by the Product manufacturer. Vivendi Water Systems Ltd hereby assigns to the purchaser any such warranty; however, VIVENDI WATER SYSTEMS LTD EXPRESSLY DISCLAIMS ANY WARRANTY WHETHER EXPRESSED OR IMPLIED, THAT THE NON - VIVENDI WATER SYSTEMS LTD PRODUCTS ARE MERCHANTABLE OR FIT FOR A PARTICULAR PURPOSE.

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Vivendi Water Systems Ltd warrants its products against defects in materials and workmanship as described in the Warranty statement on the preceding pages.

13. USEFUL ADDRESSES

Rest of the World Headquarters

ELGA
High Street, Lane End
High Wycombe
Bucks HP14 3JH
UK
Tel: +44 (0) 1494 887 500
Fax: +44 (0) 1494 887 505

North America Headquarters

USFilter
10 Technology Drive
Lowell, MA 01851
USA
Tel: 800 875 7873 or
978 934 9349
Fax: 978 453 5821
VM: 978 458 0600

For the address of your nearest ELGA LabWater sales and service office see enclosed address list or contact:

Tel: +44 (0) 1494 887 500

Fax: +44 (0) 1494 887 505

E-mail: service@elgalabwater.com

Visit our website at http://www.elgalabwater.com

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